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Result
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Perfect score:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      91:
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
         Score
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length: 2000000000
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1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
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                                                                                                                                                                                                                                                                                                Description
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45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
148	156	157	161	166	173	173	173.5	176.5	180.5	181.5	181.5	186	189.5	190.5	193.5
27.5	28.9	29.1	29.9	30.8	32.1	32.1	32.2	32.7	33.5	33.7	33.7	34.5	35.2	35.3	35.9
433	433	433	442	432	655	559	593	559	558	615	603	562	937	560	625
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UKBAY	JN0560	UXMS	UKPG	S18932	A46688	A29941	S45281	A35029	JC5878	KFHU12	S28941	UKHUT	A45082	JC4795	TBBO
u-plasminogen acti	hepatocyte growth	t-plasminogen acti	coagulation factor	t-plasminogen acti	plasma hyaluronan-	coagulation factor	coagulation factor	t-plasminogen acti	neurotrophic recep	plasma hyaluronan-	thrombin (EC 3.4.2				

## ALIGNMENTS

Scan

JC5061 151285 A47136 S33879 A40522 A60140 T18518 JH0579 I51283 A35644 A47299 A61545 B61545 E61545 845082 S10511 TBHU A40332 A60185 146260 neurotrophic thrombin (EC thrombin (EC plasmin
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A;Title: Multiple members of the plasminogen-apolipoprotein(a) gene family associated A;Reference number: I52415; MUID:92207924; PMID:1554698 apoprotein(a) (EC 3.4.21.-) precursor [validated] - human
N;Alternate names: apolipoprotein(a); lipoprotein(a) chain apo(a)
C;Species: Homo sapiens (man)
C;Date: 30-Jun-1989 #sequence\_revision 30-Jun-1989 #text\_change 08-Dec-2000
C;Accession: S00657; A28017; A47277; I60906; A47233; I52415; I65286
R;McLean, J.W.; Tomilinson, J.E.; Kuang, W.J.; Baton, D.L.; Chen, E.Y.; Fless, G.M.;
Nature 330, 132-137, 1987 A;Cross-references: GB:M90078; NID:g178786; PIDN:AAA35547.1; PIU:g553148 A;Note: apo(a) gene 1 (nomenclature of reference I52415) A;Accession: A47233 A;Status: preliminary; translation not shown; translated from GB/EMBL/DDBJ A;Status: preliminary; translated from GB/EMBL/DDBJ A;Molecule type: DNA A;Residues: 1-16 <RE2> A;Cross-references: GB:L07899; NID:g967973; PID:g967974
R;Malgaretti, N.; Acquatt, F.; Magnaghi, P.; Bruno, L.; Pontoglio, M.; Rocchi, M.; Saccor Proc. Natl. Acad. Sci. U.S.A. 89, 11584-11588, 1992
A;Title: Characterization by yeast artificial chromosome cloning of the linked apolipopro X',4396-4401 <EAT's R; Wade, D.P.; Clarke, J.G.; Lindahl, G.E.; Liu, A.C.; Zyso Proc. Natl. Acad. Sci. U.S.A. 90, 1369-1373, 1993 Proc. Natl. A;Molecule type: mRNA
A;Residues: 1-4548 <MCL>
A;Residues: 1-4548 <MCL>
A;Residues: 1-4548 <MCL>
A;Cross-references: GB:X06290, EMBL:X06696; NID:g28619; PIDN:CAA29618.1; PID:g28620
A;Cross-references: GB:X06290, EMBL:X06696; NID:g28619; PIDN:CAA29618.1; PID:g28620
A;Eaton, D.L.; Fless, G.M.; Kohr, W.J.; McLean, J.W.; Xu, Q.T.; Miller, C.G.; Lawn, R.M.;
Proc. Natl. Acad. Sci. U.S.A. 84, 3224-3228, 1987
A;Tille: Partial amino acid sequence of apolipoprotein(a) shows that it is homologous to A;Reference number: A28017; MUID:87204109; PMID:3472206 Nature 330, 132-137, 1987
A;Title: cDNA sequence of human apolipoprotein(a) is homologous to plasminogen.
A;Reference number: S00657; MUID:88039109; PMID:3670400
A;Accession: S00657 R; Ichinose, A. A; Molecule type: DNA A; Residues: 1-16 < RE5> A;Reference number: A47233; MUID:93087573; PMID:1454851 A;Accession: I60906 A;Status: preliminary; translation not shown; translated A;Molecule type: DNA A;Residues: 1-16 <RES> A; Cross-references: A;Molecule type: protein A;Residues: 20-21,'P',23-34;177-179,'N',181-186,'T',188-196,'DKG',200;292-314,'W',316-318 A; Accession: A28017 GB:M90079; NID:g178784; PIDN:AAA35546.1; A.C.; Zysow, B.R.; Meer, K.; Schwartz, K. from and PID:g553187 GB/EMBL/DDBJ members of

the

4466 46

70 67 61 52

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F;1054-1131/Domain: kringle homology <KR10>
F;1168-1245/Domain: kringle homology <KR11>
F;11282-1359/Domain: kringle homology <KR11>
F;1396-1473/Domain: kringle homology <KR11>
F;1396-1473/Domain: kringle homology <KR13>
F;1510-1587/Domain: kringle homology <KR14>
F;1510-1587/Domain: kringle homology <KR15>
F;1738-1815/Domain: kringle homology <KR16-
F;11966-2043/Domain: kringle homology <KR17>
F;19166-2043/Domain: kringle homology <KR18>
F;2080-2157/Domain: kringle homology <KR20>
F;2194-2271/Domain: kringle homology <KR20>
F;2308-2385/Domain: kringle homology <KR21>
F;2536-2613/Domain: kringle homology <KR21>
F;2536-2613/Domain: kringle homology <KR23>
F;2650-2727/Domain: kringle homology <KR25>
F;26764-2841/Domain: kringle homology <KR25>
F;2764-2841/Domain: kringle homology <KR27>
F;33106-3183/Domain: kringle homology <KR288>
F;2992-3069/Domain: kringle homology <KR289>
F;334-3411/Domain: kringle homology <KR289>
F;334-3411/Domain: kringle homology <KR30>
F;3676-3753/Domain: kringle homology <KR30>
F;3676-3753/Domain: kringle homology <KR31>
F;3676-3753/Domain: kringle homology <KR31>
F;3676-3939/Domain: kringle homology <KR33>
F;3782-3859/Domain: kringle homology <KR35>
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A;Molecule type: DNA
A;Residues: 1-16 <RE3>
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A; Note: several genes closely linked on chromosome
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A;Cross-references: GDB:120699; OMIM:152200
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A; Residues: 1-16 < RE4 >
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F;3896-3973/Domain:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F;3562-3639/Domain:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;142-219/Domain: kringle homology <KR2>,256-333/Domain: kringle homology <KR3>,370-447/Domain: kringle homology <KR4>,484-561/Domain: kringle homology <KR5>,598-675/Domain: kringle homology <KR6>,712-789/Domain: kringle homology <KR6>,712-789/Domain: kringle homology <KR7>,8826-903/Domain: kringle homology <KR8
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Note: apo(a) gene 1 (nomenclature of reference I52415)
                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                      Local
4063
                                                                                                                             4003
                                                           61
                                                                                                                                                                                                                                                           91;
                                                                                                                                                                                                                                                                                      Similarity
DSGKOPWCYTTDPCVRWEYCNLTQCSETESG 4093
                                    DSGKQPWCYTTDPCVRWEYCNLTQCSETESG 91
                                                                                                                          KSPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNP
                                                                                                                                                              KSPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNP 60
                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                kringle
kringle
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                                                                                                                                                                                                                                                                                                                                                                                                             homology
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Pred. No. 2.4e-44;
; Mismatches 0;
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A,Cross-references; GB:J04635; NID:g342072; PIDN:AAA36833.1; PID:g342073
(;Superfamily: apolipoprotein(a); kringle homology; trypsin homology
C;Keywords: hydrolase; kringle; lipid binding; lipoprotein; serine proteinase
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F;164-241/Domain: kringle homology <KR2>
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F;206-583/Domain: kringle homology <KR6>
F;526-83/Domain: kringle homology <KR6>
F;526-897/Domain: kringle homology <KR6>
F;726-803/Domain: kringle homology <KR6>
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F;726-803/Domain: kringle homology <KR6>
F;726-803/Domain: kringle homology <KR8>
F;954-1031/Domain: kringle homology <KR8>
F;954-1031/Domain: kringle homology <KR8>
                                                                                                                                                                                                                                                                                                                                              A;Cross references: GB:J04697; NID:g342272; PIDN:AAA36901.1; PID:g342273
C;Superfamily; plasmin; kringle homology; plasminogen-related protein precursor homology, (Keywords: fibrinolysis; glycoprotein; hydrolase; kringle; serine proteinase
F;1-96/Domain: plasminogen-related protein precursor homology <PLPH>
F;1-96/Domain: signal sequence #status predicted <SIG>
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F;103-181/Domain: kringle homology <KR2>
F;275-352/Domain: kringle homology <KR3>
F;377-454/Domain: kringle homology <KR3>
F;377-454/Domain: kringle homology <KR4>
F;377-454/Domain: kringle homology <KR4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 plasmin (EC 3.4.21.7) precursor - rhesus macaque C;Species: Macaca mulatta (rhesus macaque) C;Date: 31-Mar-1989 #Bequence revision 31-Mar-1989 #text_change 22-Jun-1999 C;Accession: B32869; B30848 R;Tomlinson, J.E.; McLean, J.W.; Lawn, R.M. J. Biol. Chem. 264, 5957-5965, 1989 J. Biol. Chem. 264, 5957-5965, 1989 A;Title: Rhesus monkey apolipoprotein(a). Sequence, evolution, and sites of A;Reference number: A32869; MUID:89174660; PMID:2925643
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C;Species: Macaca mulatta (rhesus macaque)
C;Date: 22-Nov-1889 #sequence_revision 22-Nov-1989 #text_change 22-Jun-1999
C;Accession: A32869; A30848
R;Tomlinson, J.B.; McLean, J.W.; Lawn, R.M.
J. Biol. Chem. 264, 5957-5965, 1989
                                                                                                                                                                                            F;481-560/Domain: kringle homology <KR5>
F;581-803/Domain: trypsin homology <TRY>
F;49-73,53-61,103-181,124-164,152-176,185-262,188-316,206-245,234-257,275-352,296-335,324
bonds: #status predicted
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A; Residues: 1-810 < TOM>
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Pred. No. 1.8e-42;
Score 425; DB 2;
Pred. No. 6.7e-34;
0; Mismatches 10
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A;Experimental source: liver
R;Malinowski, D.P.; Sadler, J.E.; Davie, E.W.
Biochemistry 23, 4243-4250, 1984
A;Title: Characterization of a complementary deoxyribonucleic
A;Reference number: I45961; MUID:85023311; PMID:6148961
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                                                                                                                                                                                                 A;Title: Comparison of the primary str
A;Reference number: S03735; MUID:81212
A;Accession: S03735
A;Molecule type: protein
A;Residues: 20-71, E;73-76 <BRU>
A;Residues: 20-71, E;73-76 <BRU>
R;Sottrup-Gansen, L; Petersen, T.E.;
submitted to the Atlas, July 1977
                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;Brunisholz, R.A.; Lerch, P.G.; Schaller, J.; Rickli, E.E.; Lergier, W.; Manneberg, M. Eur. J. Biochem. 114, 465-470, 1981
A;Tille: Comparison of the primary structure of the N-terminal CNBr fragments of human, A;Reference number: S03735; MUID:81212097; PMID:7238497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FBBS Lett. 213, 254-260, 1987
A;Title: Molecular cloning and characterization of a full-length cDNA clone A;Reference number: A26646; MUID:87162490; PMID:3030813
                                                                                                        A; Reference number: A; Accession: A00929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: GB:K02921; NID:g190110; PIDN:AAA60123.1; PID:g190111 R;Brunisholz, R.A.; Lergier, W.;
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A;Cross-references: GB:K02922; NID:g190112;
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A; Title: Characterization of the gene for human plasminogen, a key proenzyme in the fib: A; Reference number: A35229; MUID:90202879; PMID:2318848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   र्
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A; Residues: 367-419
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\;Residues: 1-810 <PET>
\;Cross-references: GB:M34276; NID:g190064; PIDN:AAA60113.1; PID:g387026
\;Cross-references: GB:M5286; GB:M34276; NID:g190064; PIDN:AAA60113.1; PID:g387026
\;Experimental source: leukocyte; lung fibroblast
\;Experimental source: leukocyte; lung fibroblast
\;Aalgaretti, N.; Bruno, L.; Pontoglio, M.; Candiani, G.; Meroni, G.; Ottolenghi, S.; Ta
\;Cochem. Blophys. Res. Commun. 173, 1013-1018, 1990
\;Tatle: Definition of the transcription initiation site of human plasminogen gene in li
\;Tatle: Definition of the transcription initiation site of human plasminogen gene in li
\;Tatle: Definition of the transcription initiation site of human plasminogen gene in li
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;Residues: 1-16 <MAL1>
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Molecule type: protein Residues: 20-71,'E',73-85,87-106,'D',108-360,'E',362-810
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R;Robbins, K.C.; Bernabe, P.; Arzadon, L.; Summaria, L.
J. Biol. Chem. 248, 1631-1633, 1973
A;Fitle: The primary structure of human plasminogen. II. The histidine A;Fitle: The primary structure of human plasminogen. II. The histidine A;Feference number: A92125; MUID:73149248; PMID:4694729
A;Contents: annotation; active site
R;Groskopf, W.R.; Summaria, L.; Robbins, K.C.
J. Biol. Chem. 244, 3590-3597, 1969
A;Fitle: Studdes on the active center of human plasmin. Partial amino a A;Reference number: A92048; MUID:69234739; PMID:4240117
A;Contents: annotation; active site
R;Trexler, M.; Vali, Z.; Patthy, L.
J. Biol. Chem. 257, 7401-7406, 1981
A;Reference number: A92382; MUID:82213905; PMID:6919539
A;Contents: annotation; omega-aminocarboxylic acid binding sites
R;Vali, Z.; Patthy, L.
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J. Biol. Chem. 259, 13690-13694, 1984
A;Title: The fibrin-binding site of human plasminogen. Arginines 32 and 34 are essential A;Reference number: A92458; MUID:85054794; PMID:6094526
A;Reference number: A92458; MUID:85054794; PMID:6094526
A;Contents: annotation; fibrin binding site; omega-aminocarboxylic acid binding site R;Cao, Y.; Ji, R.W.; Davidson, D.; Schaller, J.; Marti, D.; Soehndel, S.; McCance, S.G.; J. Biol. Chem. 271, 29461-29467, 1996
A;Title: Kringle domains of human angiostatin. Characterization of the anti-proliferative A;Reference number: A58811; MUID:97067211; PMID:8910613
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Bur. J. Biochem. 58, 539-547, 1975

A;Title: Amino-acid sequence of the cyanogen-bromide fragment from human plasminogen

A;Reference number: A04626; MUID:76043692; PMID:126863

A;Accession: A04626
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A;Title: Generation of an angiostatin-like fragment from plasminogen by stromelysin-l A;Reference number: A58812; MUID:9548733; PMID:9548733
A;Contents: annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R; Wiman; L.,
Riochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      submitted to the Brookhaven Protein Data Bank, July 1991
A;Reference number: A51341; PDB:1PK4
A;Contents: annotation; X-ray crystallography, 1.9 angstroms, residues 376-454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: protein
A; Residues: 483-507, 'E', 509-604 <WI3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eur. J. Biochem. 76, 129-137, 1977
A;Title: Primary structure of the B-chain of human
A;Reference number: A04627; MUID:77225245; PMID:142
A;Accession: A04627
                                                                                               submitted to the Brookhaven Protein Data Bank, A; Reference number: A65244; PDB:1CEA
                                                                                                                                                                                                                                                            R;Padmanabhan, K.; Tulinsky, A. submitted to the Brookhaven Protein Data Bank,
                                                                                                                                                                                                                                                                                                                                                                                                      R;Wu, T.P.; Tulinsky, A. submitted to the Brookhaven Protein Data Bank,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         submitted to the Brookhaven Protein Data Bank, A; Reference number: A51488; PDB:2PK4
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R; Robbins, K.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Reference number: A04625; A; Accession: A04625
                            A;Contents: annotation; X-ray crystallography, R;Tulinsky, A.; Mathews, I.I.
                                                                                                                                                                   R;Tulinsky, A.; Mathews,
                                                                                                                                                                                                                                      A; Reference number: A52408; PDB:1PMK
                                                                                                                                                                                                                                                                                                                                                                      A; Reference number: A51911; PDB:1PKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Contents: annotation; X-ray crystallography,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Tulinsky, A.; Wu,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Tulinsky, A.; Mulichak, A.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Contents: annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Residues:
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                                                                                                                                                                                                                                                                                                                                   A; Contents: annotation; X-ray crystallography,
                                                                                                                                                                                               Contents: annotation; X-ray crystallography,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B.; Wallen, P.
Biochem. 50, 489-494, 1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Structural relationship
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PMID:142009
                                                                                                                                                                                                                                                                                                                               2.48 angstroms,
   December 1995
                                                                                                                                      December 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2.25 angstroms,
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                                                            2.1 angstroms,
                                                                                                                                                                                               2.25 angstroms,
                                                                                                                                                                                                                                                                      April 1994
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A;Contents: annotace...
A;Contents: annotace...
R;Mulichak, A.M.; Tulinsky, A.; Ravace...
Biochemistry 30, 10576-10588, 1991
Biochemistry 30, 10576-10588, 1991
A;Title: Crystal and molecular structure of human plasminogen
A;Title: Crystal and molecular structure of human plasminogen
A;Title: A58819; MUID:92031502; PMID:1657148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R;Rejante, M.R.; Llinas, M.

Bur. J. Blochem. 221, 939-949, 1994

A;Title: Solution structure of the epsilon-aminohexanoic acid complex of human plasmin A;Title: Solution structure of the epsilon-aminohexanoic acid complex of human plasmin A;Title: Solution structure of the epsilon-aminohexanoic acid complex of human plasmin A;Title: Solution structure of the epsilon-aminohexanoic acid complex of human plasmin A;Telescontents: annotation; conformation by (1)H-NMR

C;Comment: Plasminogen is synthesized by the kidney and is present in plasma and many C;Comment: Plasminogen is converted to plasmin by plasminogen activators (see PIR;UKHU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Contents: annotation; X-ray crystallography, 1.67 angstr R;Rejante, M.; Llinas, M. submitted to the Brookhaven Protein Data Bank, August 1996 A;Reference number: A65803; PDB:1HPJ
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Biochemistry 30, 10589-10594, 1991
A;Title: The refined structure of the epsilon-aminocaproic acid complex
A;Reference number: A58818; MUID:92031503; PMID:1657149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Reference number: A65245; PDB:1CEB
                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Keywords: angiogenesis inhibitor; blood; duplication; fibrir F;1-96/Domain: plasminogen-related protein precursor homology F;1-96/Domain: signal sequence #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: GDB:119498; OMIM:173350
A;Map position: 6q26-6q27
A;Introns: 17/1; 62/2; 98/1; 136/2; 183/1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A,Title: (1)H-NMR assignments and secondary structure of human plasminogen A,Reference number: S43645; MUID:94237157; PMID:8181475 A;Contents: annotation; conformation by (1)H-NMR, residues 96-184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Contents: annotation; conformation by (1)H-NMR, residues R;Rejante, M.; Llinas, M. submitted to the Brookhaven Protein Data Bank, August 1996 A;Reference number: A65804; PDB:1HPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Contents: annotation; X-ray crystallography, 2.4 angst: R;Stec, B.; Teeter, M.M.; Whitlow, M.; Yamano, A. submitted to the Brookhaven Protein Data Bank, June 1995 A;Reference number: A65980; PDB:1KRN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Biochemistry 31, 270-279, 1992
A;Title: Crystal structure of the kringle 2 domain of tissue
A;Reference number: A39483; MUID:92118803; PMID:1310033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A,Description: dissolves the fibrin of blood clots, acts as a proteolytic factor in a vans the walls of the graafian follicle, also activates the urokinase-type plasminogen act
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C; Function:
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A;Gene: GDB:PLG
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Eur. J. Biochem. 221, 927-937, 1994
F;550-580,581-810/Product: microplasmin
                                                                                                                                                                                                                                                                                                                                                                                                                      F;20-810/Product:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Pathway: fibrinol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ting solid tumors.
                                      ;79-466/Product: anglostatin #status experimental <AST>
;97-580, S91-810/Product: plasmin #status experimental <MAT
;97-580/Domain: plasmin chain A #status experimental <CHA>
;103-181/Domain: kringle homology <KR1>
;185-262/Domain: kringle homology <KR2>
;275-352/Domain: kringle homology <KR3>
;377-454/Domain: kringle homology <KR4>
;377-454/Domain: kringle homology <KR4>
;377-454/Domain: kringle homology <KR4>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Comment: Plasmin is inactivated by alpha-2-antiplasmin (see PIR:ITHUA2) immeg-580, resulting in two chains connected by two disulfide bonds. Without the Comment: Microplasmin is formed by autolytic cleavage of plasmin under artifications. Stromelysin 1 (see PIR:KCHUS1) acts on plasminogen to produce angion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         de Vos, A.M.; Ultsch, M.H.; Kelley, R.F.; Padmanabhan, K.; Tulinsky, A.; Westbrook, M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Superfamily: plasmin; kringle homology; plasminogen-related protein precursor homology;
Keywords: angiogenesis inhibitor; blood; duplication; fibrinolysis; glycoprotein; hydi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PIR: FGHUGB)
                                                                                                                                                                                                                                                                                                                                                                       20-96/Domain: activation peptide #status experimental <APT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contents:
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                                                                                                                                                                                                                                                                                                                                                                                                                 plasminogen #status experimental <PRO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98/1; 136/2; 183/1; 223/2; 263/1; 317/2; 366/1; 419/2; 480/1; 52
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    #status experimental <MMT>
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A; Pathway: 1
C; Superfami
C; Keywords:
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A;Experimental source: liver
A;Note: it is uncertain whether Met-1 or Met-8 is the initiator
R;Schaller, J.; Moser, P.W.; Danneger-Muller, G.A.K.; Rosselet, S.J.; Kamg
Eur. J. Biochem. 149, 267-278, 1985
Eur. J. Biochem. 149, 267-278, 1985
A;Ritle: Complete amino acid sequence of bovine plasminogen. Comparison wit A;Reference number: A25835; MUID:85203906; PMID:3846532
A;Accession: A25835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: GB:K02935; NID:g163551; PIDN:AAA30714.1; PID:g163552
R;Brunisholz, R.A.; Lerch, P.G.; Schäller, J.; Rickli, E.E.; Lergier, W.; Manneberg, M. Bur. J. Biochem. 114, 465-470, 1981
A;Title: Comparison of the primary structure of the N-terminal CNBr fragments of human, A;Reference number: S03735; MUID:81212097; PMID:7238497
A;Accession: S03736
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C;Date: 30-Sep-1987 #sequence revision 28 Apr-1995 #text_change 18-Jun-199
C;Accession: S45046; A25835; I45961; S03736
R;Berglund, L.; Andersen, M.D.; Petersen, T.E.
submitted to the EMBL Data Library, May 1994
A;Description: Cloning and characterizatin of the bovine plasminogen cDNA.
A;Reference number: S45046
                                                       F;110-188/Domain: kringle homology <KR1>
F;192-269/Domain: kringle homology <KR2>
F;282-359/Domain: kringle homology <KR3>
F;384-461/Domain: kringle homology <KR4>
F;384-461/Domain: kringle homology <KR4>
F;485-564/Domain: kringle homology <KR5>
F;584-812/Domain: plasmin chain B #status experimental <BCH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Description: dissolves the fibrin of blood clots; acts as a proteolytic factor in ans the walls of the graafian follicle; also activates the urokinase-type plasminogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 706-743,'R',745-812 <MAL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Title: Characterization of a complementary deoxyribonucleic A;Reference number: I45961; MUID:85023311; PMID:6148961 A;Accession: I45961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: protein
A; Regidues: 27-334, 'D', 336-515, 'H', 517-554, 'L', 556-812 <SCH:
R; Malinowski, D.P.; Sadler, J.E.; Davie, B.W.
Biochemistry 23, 4243-4250, 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: mRNA
A; Residues: 1-812 <BEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       당
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: protein A; Residues: 27-83 < BRU>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N;Alternate names:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                plasmin (EC 3.4.21.7) precursor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Accession: S45046
                                                                                                                                                                                                                                                           27-103/Domain: activation peptide #status experimental <APT>;104-583,584-812/Product: plasmin #status experimental <MAT>;104-583/Domain: plasmin chain A #status experimental <ACH>
                                                                                                                                                                                                                                                                                                                                                                                                                            Superfamily: plasmin, kringle homology; plasminogen-related protein precursor homology;
Keywords: duplication; fibrinolysis; glycoprotein; hydrolase; kidney; kringle; plasma;
1-26/Domain: signal sequence #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                             8-103/Domain: plasminogen-related protein precursor homology 27-812/Product: plasminogen #status experimental <PRO>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            fibrinolysis
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1-812 <BER>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 SPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNPD
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homology <TRY>
-171,159-183,192-269,195-323,213-252,241-264,282-359,303-342,331
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8; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                 <PLPH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S.J.; Kampfer,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Manneberg, M.;
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N;Contains: miniplasminogen
C;Speciles: Sus scrofa domestica (domestic pig)
C;Date: 07-Sep_1990 #sequence revision 01-Nov-1996 #text_change 18-Jul-1997
C;Accession: S03733; S03737; Ā25834
R;Schaller, J; Marti, T.; Roesselet, S.J.; Kaempfer, U.; Rickli, E.E.
Fibrinolysis 1, 91-102, 1987
A;Title: Amino acid sequence of the heavy chain of porcine plasmin. Comparison
A;Molecule type: protein
A;Residues: 1-57 <BRUS
R;Marrii T.; Schaller, J.; Ricl
Eur. J. Biochem. 149, 279-285,
                                                                         A; Molecule type: protein
A; Residues: 1-560 <SCH>
A; Residues: 1-560 <SCH>
A; Residues: 1-560 <SCH>
B; Rerunisholz, R.A.; Lerch, P.G.; Schaller, J.; Rickli, E.E.; Lergier, W.; Manneberg, M. R; Brunisholz, R.A.; Lerch, 1981

Eur. J. Biochem. 114, 465-470, 1981

Eur. J. Biochem. 114, 465-470, 1981

Eur. J. Biochem. 114, 465-470, 1981

A; Title: Comparison of the primary structure of the N-terminal CNBr fragments of human, A; Reference number: S03735; MUID:81212097; PMID:7238497

A; Accession: S03737
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Enzyme 40, 63-69, 1988
A;Title: Structural aspects
A;Reference number: A61545;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              plasmin (EC 3.4.21.7) precursor - goat (fragments) N;Alternate names: plasminogen C;Species: Capra aegagrus hircus (domestic goat) C;Date: 28-Oct-1994 #sequence_revision 28-Oct-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          F;315/Binding site: carbohydrate (Ass
F;365/Binding site: carbohydrate (Ses
F;624,667,762/Active site: His, Asp,
                                                                                                                                                                                                                             A; Accession: S03733
                                                                                                                                                                                                                                                 A; Reference number: S03733
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Best Local S
Matches 67
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Best Local :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QDCYHGNGQSYRGTSSTTVTGRKCQSWSSMIPHRHQKTPESYPNAGLTMNYCRNPDADKS 98
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77.3%;
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                   Rickli,
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(Ser)
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Pred. No. 1e-32;
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(covalent) #status experimental
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F;166-243/Domain: kringle homology <KR2>
F;256-333/Domain: kringle homology <KR3>
F;358-435/Domain: kringle homology <KR4>
F;358-435/Domain: kringle homology <KR4>
F;358-435/Domain: kringle homology <KR4>
F;450-790/Product: miniplasminogen #status experimental <MIN>
F;461-540/Domain: kringle homology <KR5>
F;561-790/Product: pingle homology <KR5>
F;561-790/Produc
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Keywords: fibrinolysis; glycoprotein; hydrolase; k: F;1-790/Product: plasminogen #status predicted <PRO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Pathway: fibrinolysis C; Superfamily: plasmin; kringle homology; plasminogen_related protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Description: dissolves the ns the walls of the graafian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: protein A; Residues: 450-790 < MAR
    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Reference number: A25834; A; Accession: A25834
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    F;602,645,740/Active site: His,
                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                351 QTPVAQDCYRGNGESYRGTSSTTITGRKCQSWVSMTPHRHEKTPGNFPNAGLTMNYCRNP
                                                                                        61
                                                                                                                                                                                                                                                                         \vdash
                                                                                                                                                                                                                                                                                                                                                                 66;
                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                   DSGKQPWCYTTDPCVRWEYCNLTQCSETE 89
DADKSPWCYTTDPRVRWEYCNLKKCSETE 439
                                                                                                                                                                                                                                    KSPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNP
                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                  74.6%;
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follicle; also a
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                                                                                                                                                                                                                                                                                                                                                                                                       Score 402; DB 1;
Pred. No. 1.2e-31
                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ser #status predicted
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                                                                                                                                                                                                                                                                                                                                                             14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 kidney; kringle; plasma; serine
                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
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C;Species: Mus musculus (house mouse)
C;Date: 20-Sep-1991 #sequence_revision 01-Nov-1996 #text_change C;Accession: A38514; S48202; S48203
R;Degen, S.U.F.; Beell, S.M.; Schaefer I. A Communication of the communication of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: GB.J04766; NID:g200402; PIDN:AAA50168.1; R;Lijnen, H.R.; van Hoef, B.; Beelen, V.; Collen, D. Bur. J. Biochem. 224, 863-871, 1994
A;Title: Characterization of the murine plasma fibrinolytic s A;Reference number: S48202; MUID:95010076; PMID:7523120
A;Accession: S48202
C;Comment: Plasminogen is synthesized by the kidney and is present in plasma and many oft C;Comment: Plasminogen is converted into plasmin by plasminogen activators, both plasminc mediately after dissociation the clot. In the presence of the inhibitor, the activation involves also removal of the activation peptide.
C;Comment: Stromelysin 1 (see PIR:KCMSS1) acts on plasminogen to produce angiostatin. Togethal in treating solid tumors.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: protein A; Residues: 22-27 <LI2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: protein A; Residues: 20-25 <LIJ>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Accession: S48203
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: mRNA
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proteolytic factor

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Enzyme 40, 63-69, 1989
A,Title: Structural aspects of the plasminogen of various species.
A,Reference number: A61545
A,Accession: A61545
A,Accession: A61545
A,Accession: A61545
A,Molecule type: protein
A,Residues: 1-33;34-117 <SCH>
A,Residues: 1-33;34-117 <SCH>
A,Residues: 1-33;34-117 <SCH>
A,Residues: 1-33;34-117 <SCH
A,Residues: 1-33;34-117 <AGN
A,Residues: 1-33;34-117 <AGN
A,Reference number: S17527; MUID:92052077; PMID:1946332
A,Feference number: S17527; MUID:92052077; PMID:1946332
A,Residues: 118-455 <AGC2>
C,Reywords: fibrinolysis; glycoprotein; hydrolase; Kringle; plasma; serine proteinase; z c,Reywords: fibrinolysis; glycoprotein; hydrolase; Kringle; plasma; serine proteinase; z f,1-33/Domain: activation peptide (fragment) #status experimental <ART>
F,1-31/Domain: Activation peptide (fragment) #status experimental <ART>
F,37-114/Domain: kringle homology <ARA*

F.110-Ass/Product: miniplasminogen #status experimental <ART>
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G; Superfamily: plasmin; kringle homology; plasminogen-related protein precursor homology
C; Keywords: angiogenesis inhibitor; blood; duplication; fibrinolysis; glycoprotein; hydr
F;1-96/Domain: plasminogen-related protein precursor homology <PLPH>
F;1-97/Domain: signal sequence #status predicted <SIG>
F;20-91/Domain: signal sequence #status predicted <PRO>
F;20-91/Domain: activation peptide #status predicted <APT>
F;79-466/Product: plasmin peptide #status predicted <APT>
F;79-466/Product: angiostatin #status predicted <APT>
F;97-581/SB2-912/Product: plasmin #status predicted <APT>
F;97-581/Domain: chain A #status predicted <APT>
F;185-822/Domain: kringle homology <KR2>
F;275-352/Domain: kringle homology <KR3>
F;377-454/Domain: kringle homology <KR3>
F;382-805/Domain: kringle homology <KR3>
F;481-580/Domain: kringle homology <KR5>
F;882-805/Domain: kringle homology <KR5>
F;882-805/Domain: kringle homology <KR5>
F;49-73,53-61,103-181,124-164,152-176,185-262,188-316,206-245,234-257,275-352,296-335,32
Frinda: #status predicted <BCH>
F;118-455/Product: miniplasminogen #status experimental <MIN F;126-205/Domain: kringle homology <KR5> F;226-455/Domain: plasmin chain B #status experimental <BCH> F;226-448/Domain: trypsin homology <TRY> F;267,310,405/Active site: His, Asp, Ser #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     plasmin (EC 3.4.21.7) precursor - horse (fragments)
N;Alternate names: plasminogen
N;Contains: miniplasminogen
C;Species: Equus caballus (domestic horse)
C;Date: 28-Oct-1994 #sequence_revision 01-Nov-1996 #text_change 18-Jul-1997
C;Accession: A61545; S17527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bonds: #status predicted F;78-79/Cleavage site: Glu-Asn (stromelysin 1) #status predicted F;136,308/Binding site: carbohydrate (Asn) (covalent) #status predicted F;466-467/Cleavage site: Thr-Val (stromelysin 1) #status predicted F;581-582/Cleavage site: Arg-Val (plasminogen activator) #status experimental F;624,667,762/Active site: His, Asp, Ser #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Schaller, J.; Rickli, E.E.
Enzyme 40, 63-69, 1988
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Best Local S
Matches 62
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62;
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plasmin (EC 3.4.21.7) precursor - sheep (
N;Alternate names: plasminogen
N;Contains: miniplasminogen
C;Species: Ovis orientalis aries, Ovis an
C;Species: Ovis orientalis aries, Ovis an
C;Date: 28-Oct-1994 #sequence_revision 01
C;Accession: B61545; S28200
R;Schaller, J:; Rlckli, E.E.
Enzyme 40, 63-69, 1988
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A, Residues: 118-460 <SC2>
A, Residues: 118-460 <SC2>
C, Superfamily: plasmin; kringle homology; plasminogen-related protein precursor homology; C, Superfamily: plasmin; kringle homology; plasminogen: kringle; plasma; serine proteinase; z)
C, Keywords: fibrinolysis; glycoprotein; hydrolase; kringle; plasma; serine proteinase; z)
F, 1-37, 18-117, 118-60/Product: plasminogen (fragments) #status experimental <PRO>
F, 1-37/Domain: activation peptide (fragment) #status experimental <ART>
F, 38-117, 118-30, 231-460/Product: plasmin (fragments) #status experimental <ART>
F, 44-118/Domain: kringle homology <KR4>
F, 44-118/Domain: kringle homology <KR4>
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A;Molecule type: protein
A;Residues: 1-37,38-117 <SCH>
A;Residues: 1-37,38-117 <SCH>
R;Schaller, J.; Straub, C.; Kaempfer, U.; Rickli, E.E.
Protein Seq. Data Anal. 5, 21-25, 1992
A;Title: Complete amino acid sequence of ovine miniplasminogen.
A;Reference number: S28200; MUID:93149995; PMID:1492092
A;Accession: S28200
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F;133-211/Domain: kringle homology <KR5>
F;236-460/Domain: plasmin chain B #status experimental <BCH>
F;231-453/Domain: trypsin homology <TRY>
F;272,315,410/Active site: His, Asp, Ser #status predicted
A,Title: Structural aspects of the plasminogen of vario A,Reference number: A61545; MUID:89005015; PMID:3168975 A;Accession: E61545
                                                                                                                                                 plasmin (EC 3.4.21.7) precursor - dog (N;Alternate names: plasminogen C;Species: Canis lupus familiaris (dog) C;Date: 28-Oct_1994 #sequence_revision
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                                                                             R;Schaller, J.; Rickli, Enzyme 40, 63-69, 1988
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                                                                                                                         C; Accession: E61545
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Best Local S
Matches 64
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Best Local S
Matches 64
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        39 QDCYHGNGQGYRGTSSTTVTGRKCQSWSSMIPHRHQKTPESYPNAGLTMNYCRNPDADKS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6 QDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNPDSGKQ
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                                                                                                                                                                                                                                                                                                                                                           PWCYTTDPRVRWEFCNLKKAPQAPS
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Pred. No. 2e-30;
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sheep (fragments)
                                                                                                                                                                                                                            dog (fragments)
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01-Nov-1996 #text_change 17-Mar-1999
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                                                                                                                                                      28-Oct-1994 #text_change 12-May-1995
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A; Residues:
C; Superfamil
C; Keywords:
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A;Residues: 1-810 <LAM>
A;Residues: 1-810 <LAM
C;Superfamily: plasmin; kringle homology; plasminogen-related protein precursor homology <PLPH>
F;103-181/Domain: kringle homology <KR1>
F;185-262/Domain: kringle homology <KR2>
F;178-352/Domain: kringle homology <KR3>
F;178-352/Domain: kringle homology <KR3>
F;178-352/Domain: kringle homology <KR3>
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-169 <KAN>
A;Cross-references: GB:M62832;
A;Note: the authors translated
                                                                                                                                                                                               plasmin (EC 3.4.21.7) precursor - rat (fragment) C;Species: Rattus norvegicus (Norway rat) C;Date: 28-Feb-1992 #sequence_revision 17-Apr-19 C;Accession: A40522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      plasmin (EC 3.4.21.7) precursor - western European hedgehog
C;Species: Erinaceus europaeus (western European hedgehog)
C;Date: 21-Feb-1997 #sequence_revision 21-Feb-1997 #text_change 16-Jul-1999
                                                                                             A;Title: Identification of the rat Heymann nephritis autoantigen (GP330) A;Reference number: A40522; MUID:91250378; PMID:1645711 A;Accession: A40522
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A; Title: The recurring evolution of Lp(a):
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F;37-114/Domain: kringle homology <KR4>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 F;379-456/Domain:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Status: preliminary; translated from GB/EMBL/DDBJ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R; Lawn, R.M.; Boonmark, N.W.; Schwartz, K.;
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Best Local S
Matches 61
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                                                                                                                                                                                 J.J.; Makker, S.P.
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||:|||::|||::|||::|
VQECYHGNGQSYRGTSSTITIGRKCQSWSSMIPHRHEKTPEHFPEAGLTMYYCRNPDADK 93
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                                                                                                                                                                                                                                                                                                                                                                                                        DSGKQPWCYTTDPCVRWEYCNLTQCSETE
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                                                                                                                                                              266, 10825-10829,
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                                                                                                                                                                1991
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Pred. No. 2.6e
13; Mismatches
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  :g206215; PIDN:AAA41884.1; codon TCT for residue 76
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No. 2.6e-29;
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L.1e-30;
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    PID:g554488
as Ala
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A;Accession: Accession: Accessio
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T18518
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Biochim. Biophys. Acta 832, 326-330, 1985
Biochim. Biophys. Acta 832, 326-330, 1985
A;Title: The kringle 4 domain of chicken plasminogen.
A;Reference number: A60140; MUID:86077796; PMID:4074753
A;
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Query Match
Best Local Similarity
Thes 45; Conserv
                                                                                                                                                                                                                                                                A,Status: preliminary; translated
A;Molecule type: mRNA
A;Residues: 1-2869 <LAW>
                                                                                                                                                                                                                                                                                                                                                                                        R;Lawn, R.M.; Boonmark, N.W.; Schwartz, K.; Lindahl, G.E.; Wade, J. Biol. Chem. 270, 24004-24009, 1995
A;Title: The recurring evolution of Lp(a): Insights from cloning A;Reference number: I46259; MUID:96025778; PMID:7592597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Date: 15-Oct-1999
C; Accession: T18518
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NyAlternate names: plasminggen
CySpecies: Gallus gallus (chicken)
CyDate: 22-Jan 1993 #sequence_revision
                                                                                                                                              A; Experimental source: liver C; Comment: The lipoprotein Li ent apolipoprotein(a).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      apolipoprotein(a) - western European hedgehog (fragment)
C;Species: Erinaceus europaeus (western European hedgehog)
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 07-Dec-1999
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539
     127863 seqs, 47026705 residues
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Copyright (c) 1993 - 2004 Compugen Ltd.
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P12545 macaca mula
P00747 homo sapien
P06868 bos taurus
P06867 sus scrofa
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P00737
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Q9v6k3
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VARIANT ARG-4193. MEDLINE=95002201; PubMed= Scanu A.M., Pfaffinger D. "A single point mutation "A single point mutation	X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS) OF MEDLINE=66217881; PubMed=8642595; Mikol V., Lograsso P.V., Boettcher B.R.; "Crystal structures of apolipoprotein(a) complexed with 6-aminohexanoic acid and acid: existence of novel and expected by J. Mol. Biol. 256:751-761(1996).	I THE INSECTION 1 LIPOPLOCETH (a);  L Science 246:904-910(1989).  N [4]  N	SERINE PROTEASE MEDLINE=9007612 Salonen EM., "Lipoprotein (a.) activity capabl activity 18:4035- [3] EMBO J. 8:4035- REVIEW. MEDLINE=9004922 Utermann G.; "The mann G.;	SEQUENCE FROM N.A. SEQUENCE FROM N.A. MEDLINE=88039109; PubMed=3670400; MCLean J.W., Tomlison J.E., Kuang W. MCLean J.W., Scanu A.M., Lawn R.M.; "CDNA sequence of human apolipoprote plasminogen."; Nature 330:132-137(1987).	olipoprot A. no sapien karyota; nmalia; E BI_TaxID=	LT 1 _HUMAN APOA HUMAN P08519; 01-AUG-1988 01-AUG-1988 15-SEP-2003	173.5 173 172 166 163 161.5 161.5 158.5 159.5 159.5
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.7918682; Lee J. (Trp72	ANGSTR 3642595; 30ettche 30ipopro anoic ac and expe (1996).	- AND O- 11294842 7le L., E the N- E o-glyc	2531657; M., Zar M. Zar Eibronec ing it. "	3670400; , Kuang awn R.M. polipopr	or (EC 3 ata; Cra ces; Cat	PRT ced) sequen	1 FA12_BOVIN 1 HGFA_HUMAN 1 TPA_MOUSE 1 UROK_RAT 1 KRM2_HUMAN 1 KRM1_MOUSE 1 KRM1_RAT 1 KRM2_MOUSE 1 KRM1_HUMAN 1 KRM2_MOUSE 1 KRM1_TUMAN 1 KRM2_MOUSE 1 KRM1_KRM2_MOUSE 1 KRM2_MOUSE
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ringle	free and thylbenzoic	Thill	olm C.; ceinase	n E.Y.	)). leostomi;		P98140 k Q04756 k P11214 n P29598 l Q8ncwo k Q99143 n Q99444 l Q94185 k Q96mu8 k Q96mu8 k Q96mu8 k Q96mu8 k
4-37	zoic	let J.;		:	γmi;		bos taurus homo sapien mus musculu rattus norv homo sapien mus musculu rattus norv sus scrofa homo sapien mus musculu xenopus lae mus musculu

associated with a lysine binding defect in Lp(a).";

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RL Biochim. Biophys. Acta 1227:41-45(1994).

CC (ID(a)). It has serine proteinase activity and is able of (ID(a)). It has serine proteinase activity and is able of CC autoproteolysis. Inhibits tissue-type plasminogen activator 1.

CC (ID(a) may be a ligand for megalin/Gp 330.

CC (ID(a) may be a ligand for megalin/Gp 330.

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CC (ID(a) may be a ligand for megalin/Gp 340.

CC (ID(a) may be a ligand for
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R MEROPS, SO1.226; -...

R Genew, HGNC:6667; LPA.

R MIM; 152200; -...

R GO; GO:0004866; F:endopeptidase inhibitor activity; TAS.

R GO; GO:0008015; P:circulation; TAS.

R GO; GO:0009405; P:pathogenesis; TAS.

R InterPro; IPR001314; Chymotrypsin.

R InterPro; IPR001254; Ser_protease_Try.

R InterPro; IPR001254; Ser_protease_Try.

R Pfam; PF00051; kringle; 38.

R Pfam; PF00089; trypsin; 1.

R Pfam; PF00089; trypsin; 1.

R Pfam; PF00089; KRINGLE.

R PF1NTS; PR00072; CHYMOTRYPSIN.

R PRINTS; PR00013; KRINGLE 38.

R PRODOm; PD000395; KRINGLE 38.

R PRODOm; PD000395; KRINGLE 1; 38.

R PROSITE; PS00021; TRYPSIN_EDOM; 1.

R PROSITE; PS00021; TRYPSIN_EDOM; 1.

R PROSITE; PS50134; TRYPSIN_EDOM; 1.

R PROSITE; PS00134; TRYPSIN_EDOM; 1.

R PROSITE; PS00135; TRYPSIN_EDOM; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; X06290; CAA29618.1; -.
PIR; S00657; S00657.
PDB; 1171; 13-JUN-01.
PDB; 1171; 13-JUN-02.
PDB; 1KIV; 18-MAY-99.
PDB; 3KIV; 18-MAY-99.
PDB; 4KIV; 18-MAY-99.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a c between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fo entitles requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).
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APOLIPOPROTEIN(A).
KRINGLE TYPE IV, 1.
KRINGLE TYPE IV, 2.
KRINGLE TYPE IV, 3.
KRINGLE TYPE IV, 4.
KRINGLE TYPE IV, 6.
KRINGLE TYPE IV, 6.
KRINGLE TYPE IV, 7.
                                                                                                                                                                                                                         transport; Plasma; Glycoprotein; Signal; Polymorphism; 3D-structu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (See http://www.isb-sib.ch/announce/
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RESULT 2
APOA_MACMU
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Matches 91
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P14417;
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SEQUENCE FROM N.A.
MEDLINS=89174660; PubMed=2925643;
Tomlinson J.E., McLean J.W., Lawn
"Rhesus monkey apolipoprotein(a).
synthesis.";
                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Ve
Mammalia; Eutheria; Primates; Catarrhini;
Cercopithecinae; Macaca.
NCBI_TaxID=9544;
                                                                                                                                                                                                                                                                  01-JAN-1990 (Rel. 13, Created)
01-JAN-1990 (Rel. 13, Last sequence update)
01-JAN-1990 (Rel. 14, Last annotation update)
28-FEB-2003 (Rel. 41, Last annotation update)
Appolipoprotein(a) (EC 3.4.21.-) (Apo(a)) (Lp(a)) (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
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Eukaryota; Metazoa; Chordata; C
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Conservative (
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Pred. No. 1.9e-47;
Mismatches 0;
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W; 96921BE96A465C5F CRC64;
                                                                                                                                                                                Craniata; Vertebrata; Euteleostomi; Catarrhini; Cercopithecidae;
                       Sequence,
                                              R.M.;
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R Pfam; PF00089; trypsin; 1.

R Pfam; PF00089; trypsin; 1.

R Pfam; PF00089; trypsin; 1.

R PRINTS; PR000722; CTYMOTRYPSIN.

R PRINTS; PR00018; KRINGLE.

R PRODOm; PD000395; Kringle; 10.

R SMART; SM00020; KR; 10.

R SMART; SM00020; TRYPS SPC; 1.

DR PROSITE; PS00070; KRINGLE_1; 10.

PROSITE; PS50070; KRINGLE_2; 10.

PROSITE; PS50040; TRYPSIN_DOM; 1.

PROSITE; PS00134; TRYPSIN_HIS; FALSE_NEG.

DR PROSITE; PS00135; TRYPSIN_ENEG.

DR PROSITE; PS00136; TRYPSIN_ENEG.

DR PROSITE; PS00136; TRYPSIN_ENEG.

DR PROSITE; PS00136; TRYPSIN_ENEG.

DR PROSITE; PS00137; TRYPSIN_ENEG.

DR PROSITE; PS00136; TRYPSIN_ENEG.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEROPS; S01.226;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DISEASE: Elevated plasma concentrations of apo(a) and its naturally occurring proteolytic fragments are correlated with atherosclerosis. Homology with plasminogen kringles IV and V is thought to underlie the atherogenicity of the protein, because the fragments are competing with plasminogen for fibrin(ogen) binding. MISCELLANEOUS: Apo(a) is known to be proteolytically cleaved, leading to the formation of the so called mini-Lp(a). Apo(a) fragments accumulate in atherosclerotic lesions, where they may promote thrombogenesis. O-glycosylation may limit the extent of proteolytic fragmentation (By similarity).

SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY. SIMILARITY: Contains at least 10 kringle domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 decorin (By similarity).

PTM: N- and O-glycosylated (By similarity).

ptm: N- and O-glycosylated concentrations of apo(a) and its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FUNCTION: Apo(a) is the main constituent of lipoprotein(a) (Lp(a)). It has serine proteinase activity and is able of autoproteolysis. Inhibits tissue-type plasminogen activator 1. Lp(a) may be a ligand for megalin/Gp 330.
SUBUNIT: Disulfide-linked to apo-B100. Binds to fibronectin and
                                      947
  61
                                                                           μ
                                                                                                                                   Similarity
DSGKQPWCYTTDPCVRWEYCNLTQCSETESG
                                                          KSPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNP 60
                                    KSPVVQDCYHGDGQSYRGTSSTTVTGRNCQSWSSMIPHWHQRTPENYPNAGLTRNYCRNP 1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Repeat; Atherosclerosis.
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                                                                                                                   Conservative
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KRINGLE 7.

KRINGLE 9.

KRINGLE 9.
                                                                                                                                 Score 515; DB 1;
Pred. No. 1.7e-45;
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                                                                                                                                                      Length 1420;
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                                              InterPro; IPR003966; Prothrombin.
InterPro; IPR001254; Ser protease_Try.
Pfam; PF00051; kringle; 5.
Pfam; PF00024; PAN; 1.
Pfam; PF00089; trypsin; 1.
PRINTS; PR00722; CHYMOTRYPSIN.
                                    PRINTS; PR00018;
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S 밁 S

> PROTHROMBIN. KRINGLE.

Pan\_app. Prothrombin.

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RESULT 3
PLMN_MACN
                                                                                                                                                                EMBL; J04697; AAA369
PIR; B32869; B30848.
HSSP; P00747; 1PMK.
                                                                                                                                                                                                                                                                                                  entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
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Tomlinson J.E., McLean J.W., Lawn R.M.;
"Rhesus monkey apolipoprotein(a). Sequence, evolution,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Macaca mulatta (Rhesus macaque)
Eukaryota; Metazoa; Chordata; (
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P12545;
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InterPro; IPR001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR003014; PAN.
InterPro; IPR003609; Pan_app.
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Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRODUCTS.

ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN
ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN
ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO
FIBRIN. ACTIVATED WITH CATALYTIC AMOUNTS OF STREPTOKINASE.
MISCELLANBOUS: PLASMIN IS INACTIVATED BY ALPHA-2-ANTIPLASMIN
IMMEDIATELY AFTER DISSOCIATION FROM THE CLOT.
MISCELLANBOUS: IN THE PRESENCE OF THE INHIBITOR, THE ACTIVATION
INVOLVES ONLY CLEAVAGE AFTER ARG-580, RESULTITING IN 2 CHAINS HELD
TOGETHER BY 2 DISULFIDE BONDS. WITHOUT THE INHIBITOR, THE
ACTIVATION INVOLVES ALSO REMOVAL OF THE ACTIVATION PEPTIDE.
SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY.
SIMILARITY: Contains 5 kringle domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Biol.
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CATALYTIC ACTIVITY: Preferential cleavage: Lys-|-Xaa > Arg-|-Xaa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3101. Chem. 264:5957-5965(1989).
FUNCTION: PLASMIN DISSOLVES FIBRIN OF BLOOD CLOTS FUNCTION: PLASMIN DISSOLVES OF OTHER PROCESSES A PROTEOLYTIC FACTOR IN A VARIETY OF OTHER PROCESSES EMBRYONIC DEVELOPMENT, TISSUE REMODELING, TUMOR INVAS
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                                                                                                                                                                                                                                   J04697; AAA36901.1; -.
                                                                                                                                    S01.233;
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(Rel. 12,
(Rel. 41,
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SWART; SM00473; PAN AP; 1.

SWART; SM00020; TXYP_SPC; 1.

SPROSITE; PS0021; KRINGLE 1; 5.

PROSITE; PS50070; KRINGLE 2; 5.

PROSITE; PS50070; TRYPSIN DOM; 1.

PROSITE; PS50040; TRYPSIN HIS; 1.

PROSITE; PS00135; TRYPSIN PSER; 1.
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SIGNAL
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Hydrolase; Serine
  431
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  ADKGPWCFTTDPSVRWEYCNLKKCSGTE
                            SGKQPWCYTTDPCVRWEYCNLTQCSETE
                                                                              TPVVQECYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHWHEKTPENFPNAGLTMNYCRNPD
                                                                                                    SPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYFNAGLTENYCRNPD
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PLASMIN HEAVY CHAIN A.
ACTIVATION PEPTIDE.
ACTIVATION PEPTIDE.
PLASMIN SHORT FORM OF CHAIN A.
PLASMIN LIGHT CHAIN B.
KRINGLE 1.
KRINGLE 2.
KRINGLE 3.
KRINGLE 4.
KRINGLE 4.
KRINGLE 4.
KRINGLE 5.
SERINE PROTEASE.
CHARGE RELAY SYSTEM.
OMEGA-AMINOCARBOXYLIC ACIDS.
OMEGA-AMINOCARBOXYLIC ACIDS.
OMEGA-AMINOCARBOXYLIC ACIDS.
OMEGA-AMINOCARBOXYLIC ACIDS.
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BY SIMILARITY

BY SIMILARIT
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n; Kringle; Zymogen; Repeat;
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PLMN_HUT
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          ACTIVE SITE.

ACTIVE SITE.

MEDLINE-73149248; PubMed=4694729;

MEDLINE-73149248; PubMed=4694729;

MEDLINE-73149248; PubMed=4694729;

"The primary structure of human plasminogen. II. The histidine of human plasmin: light (B) chain active center histidine sequence.

J. Biol. Chem. 248:1631-1633(1973).
                                                                                                                                                                                                                                                                                                                                          Wiman B., Wallen P., "Structural relationship between 'glutamic acid' and 'lysine' fo of human plasminogen and their interaction with the NH2-terminal activation peptide as studied by affinity chromatography."; Eur. J. Biochem. 50:489-494(1975).
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                                                                                                    "Primary
Eur. J. B
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MEDLINE=85023311; Pubmeds-6148961;
Malinowski D.P., Sadler J.E., Davie E
"Characterization of a complementary
human and bovine plasminogen.";
Biochemistry 23:4243-4250(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for human press Lett.
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MEDILINE=90202879; PubMed=2318848;
Metersen T.E., Martzen M.R., Ichinose
"Characterization of the gene for hume
in the fibrinolytic system.";
                                                                                                                                                                               Wiman B., Wallen P.; "Amino-acid sequence of the cyanogen-bromide fragment from human plasminogen that forms the linkage between the plasmin chains."; Eur. J. Biochem. 58:539-547(1975).
                                                                                                                                                                                                                                                                                SEQUENCE OF 95-580; 581-626; 657-700 AND 732-810.
Sottrup-Jensen L., Claeys H., Zajdel M., Petersen T.E., Magnusson (In) Davidson J.F., Rowan R.M., Samama M.M., Desnoyers P.C. (eds. Progress in chemical fibringlysis and thrombolysis, pp.3:191-209,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
MEDLINE=87162490; PubMed=3030813;
Forsgren M., Raden B., Israelsson M., La
"Molecular cloning and characterization
                                                                                                                                                      SEQUENCE OF
                                                                                                                                                                                                                                 SEQUENCE OF 483-604.
MEDLINE=76043692; Pu
                                                                                                                                                                                                                                                                        Raven Press, New York (1978).
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MEDLINE=75093329; PubMed=122932;
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Mammalia, Eutheria,
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ed (JUL-1977)
                                                                                                    Biochem.
                                                                                                    structure of the B-chain siochem. 76:129-137(1977).
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                                                                                                                                    581-810.
25245; PubMed=142009;
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7) to the
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Primates;
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Catarrhini;
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human plasminogen,
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CHARACTERIZATION OF MEDLINE=95042728; Pu O'Reilly M.S., Holmo
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Gerwig G.J., van Halbeek H., Vliegenthart J.F.;
"The N- and O-linked carbohydrate chains of human,
plasminogen. Species specificity in relation to si
MEDLINE=92031503; PubMed=1657149; Wu T.-P., Padmanabhan K., Tulinsky "The refined structure of the epsil
                                                                                                                             MEDLINE=92031502; PubMed=1657148; Mulichak A.M., Tulinsky A., Ravichandran "Crystal and molecular structure of humar refined at 1.9-A resolution.";
                                                                                                                                                                                                                                                                                                                                              CHARACTERIZATION OF ANGIOSTATIN.
MEDLINE=97238710; PubMed=9102221;
Sim B.K., O'Reilly M.S., Liang H.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=97207306; Pul
Pirie-Shepherd S.R.,
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"The fibrin-binding site of human plasminogen. Arginines 32 are essential for fibrin affinity of the kringle 1 domain.";
J. Biol. Chem. 259:13690-13694(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=82213905; pubMed=6919539; Trexler M., Vali Z., Patthy L.; "Structure of the omega-aminocarboxylic plasminogen. Arginine 70 and aspartic ac binding of ligand by kringle 4.";
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"Studies on the active center of human plasm
sequence of a peptide containing the active
J. Biol. Chem. 244:3590-3597(1969).
                                                                                                                                                                                          X-RAY CRYSTALLOGRAPHY (1.9 ANGSTROMS) OF MEDLINE=92031502; PubMed=1657148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             fucosylation patterns.";
Eur. J. Biochem. 173:57-63(1988).
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Biochemistry 36:8100-8106(1997).
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                                                               K-RAY CRYSTALLOGRAPHY (2.25 ANGSTROMS)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Evidence for a novel O-linked sialylated trisaccharide on Ser-248 numan plasminogen 2.";
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                                                                                                                                                                                                                                                                                                   recombinant human angiostatin
                                                                                                                                                                                                                                                            metastatic cancer.";
cer Res. 57:1329-1334(1997)
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ol. Chem. 272:7408-7411(1997).
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istry 30:10576-10588(1991).
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epsilon-aminocaproic
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tive center serine resi
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Atkinson R.A., Williams R.J.P.;
"Solution structure of the kringle 4 domain from human plasminogen
1H nuclear magnetic resonance spectroscopy and distance geometry.";
Nol. Biol. 212:541-552(1990).
                                                                                                                                                                                                                                            "Recombinant gene expression and 1H NMR characteristics of kringle (2 + 3) supermodule: spectroscopic/functional indiof plasminogen kringle domains ";
Biochemistry 35:2357-2364(1996).
                                                                                                                                         VARIANTS
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"Structure and ligand binding determinants
5 domain of human plasminogen.";
Biochemistry 37:3258-3271(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Crystal structures of the recombinant kringle 1 domain of human plasminogen in complexes with the ligands epsilon-aminocaproic a and trans-4-(aminomethyllcyclohexane-1-carboxylic Acid."; Biochemistry 35:2567-2576(1996).
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Rickli E.E.;
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Rejante M.R., Llinas
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Mathews I.I., Vanderhoff-Hanaver P.,
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Biochemistry 30:10589-10594(1991).
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ADKGPWCFTTDPSVRWEYCNLKKCSGTEA
                                                          SPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNPD
                                                                                                                                         PHE-374 AND THR-620
                       SCKOPWCYTTDPCVRWEYCNLTQCSETES
                                            TPVVQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPD
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6194156; PubMed=8652577;
S., Hu C.-K., Marti D.,
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PubMed=8181475;
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78.7%;
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Pred. No. 3.1e-36;
3; Mismatches 11
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01-NOV-1997 (Rel
28-FEB-2003 (Rel
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-I- FUNCTION: PLASMIN DISSOLVES THE FIBRIN OF BLOOD CLOTS AND ACTS
A PROTEDLYTIC FACTOR IN A VARIETY OF OTHER PROCESSES INCLUDING
EMBRYONIC DEVELOPMENT, TISSUE REMODELING, TUNOR INVASION,
AND INFLAMMATION; IN OVULATION IT WEAKENS THE WALLS OF THE
GRAAFIAN FOLLICLE. IT ACTIVATES THE UROKINASE TYPE PLASMINOGEN
ACTIVATOR, COLLAGENASES AND SEVERAL COMPLEMENT ZYMOGENS, SUCH
AS CI AND C5. IT CLEAVES FIBRIN, FIBRONECTIN, THROMBOSPONDIN,
AS CI AND C5. IT CLEAVES FIBRIN, FIBRONECTIN, THROMBOSPONDIN,
                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
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Marti T., Schaller J., Kenekit E.E., Schmid K., Kame Marti T.J., van Halbeek H., Vliegenthart J.F.;
"The N- and O-linked carbohydrate chains of human,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Berglund L., Andersen M.D., Pe "Cloning and characterization Int. Dairy J. 5:593-603(1995).
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Mammalia; Eutheria; Ce
Bovidae; Bovinae; Bos.
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Biochemistry 23:4243-4250(1984).
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"Characterization of a complementary deoxyribonucleic
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ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN

ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO

ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO

FIBRIN. CANNOT BE ACTIVATED WITH STREPTOKINASE.

PTM: N-LINKED GLYCANS CONTAIN N-ACETYLLACTOSAMINE AND SIALIC ACID.

C-LINKED GLYCANS CONSIST OF GAL-GALNAC DISACCHARIDE WITH IS

MODIFIED WITH UP TO 2 SIALIC ACID RESIDUES (MICROHETEROGENEITY).

MISCELLANEOUS: PLASMIN IS INACTIVATED BY ALPHA-2-ANTIPLASMIN

INMEDIATELY AFTER DISSOCIATION FROM THE CLOT.

SIMILARITY: BELONGS TO PERTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY

SIMILARITY: BELONGS TO PERTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LAMININ AND VON WILLEBRAND FACTOR.

CATALYTIC ACTIVITY: Preferential cleavage: Lys-|-Xaa > Arg-|-Xaa; higher selectivity than trypsin. Converts fibrin into soluble
                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY: Contains 5 kringle domains.
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X79402; CAA55939.1;
K02935; AAA30714.1;
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                                                                                                 s requires a license agreement (S an email to license@isb-sib.ch).
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(Rel. 35, Last sequence update)
(Rel. 41, Last annotation update)
precursor (EC 3.4.21.7).
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PubMed=6148961;
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bovine plasminogen cDNA.";
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Pfam; PF00024; PAN; 1.
Pfam; PF000089; trypesin; 1.
PRINTS; PR00722; CHYMOTRYPSIN.
PRINTS; PR00018; KRINGLE.
PRINTS; PR01505; PROTHROMBIN.
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SMART; SM00130; KR; 5.

SMART; SM000130; KR; 5.

SMART; SM00020; Tryp SPC; 1.

SMART; SM00020; KRINGLE 1; 5.

PROSITE; PS00021; KRINGLE 2; 5.

PROSITE; PS50070; KRINGLE 2; 5.

PROSITE; PS50240; TRYPSIN_DOM; 1.

PROSITE; PS00134; TRYPSIN_HLS; 1.

PROSITE; PS00134; TRYPSIN_SER; 1.

Hydrolase; Serine procease; Plasma; Glycoprotein; Fibrinolysis;
Hydrolase; Serine procease; Plasma; Glycoprotein; Repeat;
Tissue remodeling; Blood coagulation; Kringle; Zymogen; Repeat;
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                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR003014; PAN.
InterPro; IPR003019; Pan app.
InterPro; IPR003966; ProThrombin.
InterPro; IPR001254; Ser protease
                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S45046; PLBO
                                                                                                                                 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P00747;
                                                                                                                                                        62
                                                                                                                                                                                          68;
                                                                                                                                                                                                                                       Similarity
                                                                                                                                              DSGKQPWCYTTDPCVRWEYCNLTQCSET
                                                                                                                                                                              QTPVPQDCYHGNGQSYRGTSSTTITGRKCQSWSSMTPHRHLKTPENYPNAGLTMNYCRNP
                                                                                                                                 DADKSPWCYTTDPRVRWEFCNLKKCSET 464
                                                                                                                                                                                                                                                                         624
667
762
335
516
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744
              (Rel. 06, Created)
(Rel. 17, Last sequence update)
(Rel. 41, Last annotation updat
(EC 3.4.21.7).
                                                                                                                                                                                                                              Conservative
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                                                                         STANDARD
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/FTId=CAR 000014...
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/FTId=CAR 000015...
/FTId=CAR 000015...
CHARGE RELAY SYSTEM...
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PLASMIN LIGH
PLASMIN LIGH
KRINGLE 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                KRINGLE 2.
KRINGLE 3.
KRINGLE 4.
KRINGLE 5.
                                                                                                                                                                                                                                       Score 413;
Pred. No. 3
                                                                                                                                                                                                                                                                                                                                                                                                                   SERINE
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                                                                                                                                                                                                                              ed. No. 3.3e-35;
Mismatches 11
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E RELAY SYSTEM.
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D (IN REF. 2).
H (IN REF. 2).
L (IN REF. 2).
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RX MEDLINE-88185329; Numbed=3356193;
RA Marti T., Schaller J., Rickli E.B., Schmid K., Kamerling J.P.,
RA Marti T., Schaller J., Rickli E.B., Schmid K., Kamerling J.P.,
RA Gerwig G.J., van Halbeek H., Vliegenthart J.F.;
RA Gerwig G.J., Van Halbeethart J.F.;
RA Gerwig G.J., Van Halbeethart J.F.;
RA Gerwig G.J., 
InterPro; IPRO01314; Chymotrypsin.
InterPro; IPRO03014; PAN.
InterPro; IPRO03014; PAN.
InterPro; IPRO03014; PAN.
InterPro; IPRO03014; PAN.
InterPro; IPRO03609; Pan app.
InterPro; IPRO03609; Pan app.
InterPro; IPRO03609; Pan app.
InterPro; IPRO01254, Ser protease_Try.
Pfam; PF00051; kringle; 5.
Pfam; PF00051; kringle; 5.
Pfam; PF000081; trypsin; 1.
Pfam; PF000081; trypsin; 1.
PFINTS; PR000722; CHYMOTRYPSIN.
PRINTS; PR000722; CHYMOTRYPSIN.
PRINTS; PR000722; CHYMOTRYPSIN.
PRINTS; PR00035; KRINGLE.
PRINTS; PR01505; PROTHROMBIN.
PRODOm; PD000395; Kringle; 5.
SMART; SM000130; KR; 5.
SMART; SM000130; KR; 5.
SMART; SM00130; Tryp_SPC; 1.
PROSITE; PS00021; TRYPSIN_DOM; 1.
PROSITE; PS00021; TRYPSIN_DOM; 1.
PROSITE; PS00021; TRYPSIN_DOM; 1.
PROSITE; PS000134; TRYPSIN_HIS; FALSE_NEG.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 1-560.

Schaller J., Marti T., Roesselet S.J., Kaempfer U., Rickli E Schaller J., Marti T., Roesselet S.J., Kaempfer U., Rickli E Schaller J., Marti T., Roesselet S.J., Kaempfer U., Rickli E Schaller J., Marti T., Roesselet S.J., Kaempfer U., Rickli E Schaller J., Kaempfer U., Rickli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEROPS; S01.233;
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Marti T., Schaller
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Fibrinolysis 1:91-102(1987).
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Mammalia; Eutheria;
NCBI_TaxID=9823;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IMMEDIATELY AFTER DISSOCIATION FROM THE SIMILARITY: BELONGS TO PEPTIDASE FAMILY SIMILARITY: Contains 5 kringle domains.
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ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN
ENZYME REGULATION: CONVERTED AND ITS ACTIVATOR BEING BOUND TO
ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO
FIBRIN. CANNOT BE ACTIVATED WITH STREPTOKINASE.
PTM: N-LINKED GLYCAN CONTAINS N-ACETYLLACTOSAMINE, SIALIC ACID AND
IS CORE "FUCCOSYLATED. O-LINKED GLYCANS CONSIST OF GAL-GALNAC
DISACCHARIDE WITH IS MODIFIED WITH UP TO 2 SIALIC ACID RESIDUES
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r J., Rickli E.E.;
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Best Local S
Matches 66
Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
DOMAIN
ACT_SITE
ACT_SITE
                                                                                                                                                                                                                                     MEDLINE=91184812; PubMed=2081600; Degen S.J., Bell S.M., Schaefer L "Characterization of the CDNA cod localization of the gene to mouse
                                                                                                                                                                                                                                                                                                                                                             15-SEP-2003 (Rel. 42, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
Plasminogen precursor (EC 3.4.21.7) [Contains:
                                                                                                                                                                                                                                                                                                                                                                     P20918; Q8CIS2; Q91WJ5;
01-FEB-1991 (Rel. 17, C:
15-SEP-2003 (Rel. 42, L:
15-SEP-2003 (Rel. 42, L:
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                                                                                                   PubMed=12477932;
                                                                                                                                                           Brathwaite M., Was
Nagaraja R.;
"Genomic sequence
                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                 MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYL
                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                Submitted
                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                     Mammalia; Eutheria;
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                       Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                      PLMN MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tissue
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                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROSITE; PS00135;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66; Conservative
                                                                                                                                                                                                                     ..., Beil S.M., Schaefer L.A., Elliott R.W.; erization of the cDNA coding for mouse plasminogen tion of the gene to mouse chromosome 17."; 8:49-61(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                       FROM N.A.
                                                                                                                                                                                                                                                                                 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DADKSPWCYTTDPRVRWEYCNLKKCSETE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DSGKQPWCYTTDPCVRWEYCNLTQCSETE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      XSPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLITENYCRNP
                                                                                                                                               sequence analysis in the mouse t-complex region."; (FEB-2002) to the EMBL/GenBank/DDBJ databases.
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333
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Rodentia;
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l coagulation; Kringle; Zymogen; Repeat.
PLASMIN HEAVY CHAIN A.
PLASMIN LIGHT CHAIN B.
SERINE PROTEASE.
                                                                                                                                                                               Qian Y.,
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/FTId=CAR 000019.
O-LINKED [GALNAC. ..).
/FTId=CAR 000020.
/FT 00020 CRC64;
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CHARGE RELAY SYSTEM.
CHARGE RELAY SYSTEM.
CHARGE RELAY SYSTEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 402; DB 1;
Pred. No. 4.4e-34
                                                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; |
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                 Dudekula D.,
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Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W., villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A., Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A., Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G., Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C., Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Schein J.E., Jones S.J.M., Marra M.A., Schein J.E., Jones S.J.M., Marra M.A., "Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHARACTERIZATION OF ANGIOSTATIN, AND PARTIAL SEQUENCE.
MEDLINE=95042728; PubMed=7525077;
O'Reilly M.S., Holmgren L., Shing Y., Chen C., Rosenthal R.
Moses M., Lane W.S., Cao Y., Sage E.H., Folkman J.;
Moses M., Lane W.S., Cao Y., Sage E.H., Folkman J.;
"Angiostatin: a novel angiogenesis inhibitor that mediates
suppression of metastases by a Lewis lung carcinoma.";
Cell 79:315-328(1994)
        MGD; MGI:
GO; GO:000
GO; GO:000
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A PROTECUTION: PLASMIN DISSOLVES THE FIBRIN OF BLOOD CLOTS AND ACTS AS A PROTECUTIC FACTOR IN A VARIETY OF OTHER PROCESSES INCLUDING EMBRYONIC DEVELOPMENT, TISSUE REMODELING, TUMOR INVASION, AND INFLAMMATION; IN OVULATION IT WEAKENS THE WALLS OF THE GRAAFIAN FOLLICLE. IT ACTIVATES THE UROKINASE-TYPE PLASMINOGEN ACTIVATOR, COLLAGENASES AND SEVERAL COMPLEMENT ZYMOGENS; SUCH AS CI AND CS. IT CLEAVES FIBRIN, FIBRONECTIN, THROMBOSPONDIN, LAMININ AND VON WILLEBRAND FACTOR.

-I- FUNCTION: ANGIOSTATIN IS AN ANGIOGENESIS INHIBITOR THAT BLOCKS NEOVASCULARIZATION AND GROWTH OF EXPERIMENTAL PRIMARY AND METASTATIC TUMORS IN VIVO.

-I- CATALYTIC ACTIVITY: Preferential cleavage: Lys-|-Xaa > Arg-|-Xaa; higher selectivity than trypsin. Converts fibrin into soluble
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bannach F.G., Gutierrez A., Fowler B. Parmer R.J., Miles L.A.; Parmer R.J., Miles L.A.; "Localization of regulatory elements cytokine-stimulated plasminogen gene J. Biol. Chem. 277:38579-38588 (2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a cobetween the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fo
                                                                                                                                                                 PIR; A38514; PLMS.
HSSP; P00747; 1PMK.
MEROPS; S01.233; -.
                                                                                                                                                                                                                                                                                 EMBL; AF481053; AAM22156.1; -.
EMBL; BC014773; AAH14773.1; -.
EMBL; AY134430; AAN15805.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=129/SvJ;
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                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; J04766; AAA50168.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PubMed=12149246;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRODUCES.

ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN ACTIVATOR BEING BOUND TO FIBRIN. CANNOT BE ACTIVATED WITH STREPTOKINASE.

MISCELLANEOUS: PLASMIN IS INACTIVATED BY ALPHA-2-ANTIPLASMIN IMBOIATELY AFTER DISSOCIATION FROM THE CLOT.

MISCELLANEOUS: IN THE PRESENCE OF THE INHIBITOR, THE ACTIVATION INVOLVES ONLY CLEAVAGE AFTER ARG-581, RESULTING IN 2 CHAINS HELD TOGETHER BY 2 DISULFIDE BONDS. WITHOUT THE INHIBITOR, THE ACTIVATION INVOLVES ALSO REMOVAL OF THE ACTIVATION PEPTIDE.

SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY.

SIMILARITY: Contains 5 kringle domains.
OPS; S01.233; ...
, MGI:97620; Plg.
GO:0016506; F:apoptosis activator activity; IDA.
GO:0006915; P:apoptosis; IDA.
erPro; IPR001314; Chymotrypsin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gutierrez A., Fowler B.J., Bugge T.H., Degen J.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE=Liver;
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expression.";
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Query Match
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Matches 62
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SMART; SMO0473; PAN_AP; 1.

SMART; SM000473; Tryp_SPc; 1.

PROSITE; PS00021; KRINGLE 1; 5.

PROSITE; PS00070; KRINGLE 2; 5.

PROSITE; PS00134; TRYPSIN_DOM; 1.

PROSITE; PS00134; TRYPSIN_HIS; 1.

PROSITE; PS00135; TRYPSIN_SER; 1.

PROSITE; PS00135; TRYPSIN_SER; 1.

PROSITE; PS00136; TRYPSIN_SER; 1.

PROSITE; PS00136; TRYPSIN_SER; 1.

PROSITE; PS00136; TRYPSIN_SER; 1.

PROSITE; PS00136; TRYPSIN_SER; 1.
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CONFLICT
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CHAIN
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PRINTS; PR00722; CHYMOTRYPSIN.
PRINTS; PR001018; KRINGLE.
PRINTS; PR01505; PROTHROMBIN.
PRODOM; PD000395; Kringle; 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00051; kringle; Pfam; PF00024; PAN; 1.
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InterPro;
   62;
                 Similarity
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IPR003014; PAN.
IPR003609; Pan_app.
IPR003966; Prothrombin.
                                                                       758
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PLASMIN HEAVY CHAIN A.
ACTIVATION PEPTIDE.
ACTIVATION PEPTIDE.
ANGIOSTATIN.
PLASMIN LIGHT CHAIN B.
KRINGLE 1.
                                                                                        CHARGE RELAY SY
CHARGE RELAY SY
CHARGE RELAY SY
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KRINGLE 2.
KRINGLE 3.
KRINGLE 4.
KRINGLE 5.
                   Score 388;
Pred. No. 1
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! -> D (IN REF. 1).
! -> L (IN REF. 1).
24173260E6A2FFD2 (
     Mismatches
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E RELAY SYSTEM
E RELAY SYSTEM
E RELAY SYSTEM
                     DB 1;
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SIMILARITY).
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ID PLMN_ERIEU
AC Q29485;
DT 01-NOV-1997
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InterPro;
InterPro;
                                                                                                                                                                                                                                                                           entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nedgehog
J. Biol.
                                                                                                                                                                                                                        EMBL; U33171; AAC48717.1; PIR; 146260; 146260.
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Lawn R.M., Boonmark N.W., Schwartz K., Lindahl G.E.,
Byrne C.D., Fong K.J., Meer K., Patthy L.;
"The recurring evolution of lipoprotein(a). Insights
                                                                                                                                    InterPro;
                                                                                                                                                                                    MEROPS;
                                                                                                                                                                                                       PIR; 146260; 146260.
HSSP; P00747; 1PMK.
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Mammalia; Eutheria;
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28-FEB-2003
                                                                                                                                                       interPro;
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                                                                                                            InterPro;
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ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN

ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO

FIBRIN. CANNOT BE ACTIVATED WITH STREPTOKINASE.

MISCELLANBOUS: PLASMIN IS INACTIVATED BY ALPHA-2-ANTIPLASMIN

IMMEDIATELY AFTER DISSOCIATION FROM THE CLOT.

SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY.

SIMILARITY: Contains 5 kringle domains.
                                                                                                                                                                                                                                                                                                                                                                                         s SWISS-PROT entry is copyright. It is produced through a collaboratic ween the Swiss Institute of Bioinformatics and the EMBL outstation European Bioinformatics Institute. There are no restrictions on it
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                o; IPR001314; Chymotrypsin.
o; IPR000014; Kringle.
o; IPR003144; PAN.
o; IPR003609; Pan_app.
o; IPR003966; Prothrombin.
o; IPR001394; Ser_protease_Try.
p00051; kringle; 5.
                                                                                                                                                                                  S01.233;
                                                                                                                                                                                                                                                                                                                                            non-profit institutions as long as its content and this statement is not removed. Usage by an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     apolipoprotein(a).";
Chem. 270:24004-24009(1995).
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kringle;
PAN; 1.
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41,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (Western European hedgehog).
Chordata; Craniata; Vertebrata; Euteleostomi;
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PRODOM; PRO00395; Kringle; 5.

SMART; SM00130; KR; 5.

SMART; SM00130; KR; 5.

SMART; SM00020; Tryp SPc; 1.

SMART; SM00020; Tryp SPc; 1.

PROSITE; PS00021; KRINGLE 1; 5.

PROSITE; PS50070; KRINGLE 2; 5.

PROSITE; PS500240; TRYPSIN DOM; 1.

PROSITE; PS50134; TRYPSIN SER; 1.

PROSITE; PS00135; TRYPSIN SER; 1.

PROSITE; PS00135; TRYPSIN SER; 1.

PROSITE; PS00135; TRYPSIN SER; 1.
                                                                                                                                                                                                                                                              01-APR-1993
01-APR-1993
28-FEB-2003
Kanalas J.J., Makker S.P.;

"Identification of the rat Heymann nephritis autoantigen (GP330) as receptor site for plasminogen.";

J. Biol. Chem. 266:10825-10829(1991).

-i- FUNCTION: PLASMIN DISSOLVES THE FIBRIN OF BLOOD CLOTS AND ACTS A PROTEDLYTIC FACTOR IN A VARIETY OF OTHER PROCESSES INCLUDING EMERYONIC DEVELOPMENT, TISSUE REMODELING, TUMOR INVASION, AND INFLAMMATION; IN OVULATION IT WEAKENS THE WALLS OF THE GRAAFIAN FOLLICLE. IT ACTIVATES THE UROKINASE-TYPE PLASMINOGEN ACTIVATOR, COLLAGENASSES AND SEVERAL COMPLEMENT ZYMOGENS, SUCH AS C1 AND C5. IT CLEAVES FIBRIN, FIBRONECTIN, THROMBOSPONDIN, AS C1 AND C5. IT CLEAVES FIBRIN, FIBRONECTIN, THROMBOSPONDIN,
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ACT_SITE
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CARBOHYD
SEQUENCE
                                                                                                                                                                                                Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
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DOMAIN
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SIGNAL
                                                                                                                                      MEDLINE=91250378; PubMed=1645711;
                                                                                                                                                 TISSUE=Liver;
                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                  NCBI_TaxID=10116;
                                                                                                                                                                                                                         Rattus norvegicus (Rat)
                                                                                                                                                                                                                                                 Plasminogen
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                                                                                                                                                                                                                                                                                                                                                                                                61
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                                                                                                                                                                                                                                                                                                                                                                                                                                               1 KSPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       remodeling;
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(Rel. 25, Last sequence update)
(Rel. 41, Last annotation update)
(EC 3.4.21.7) (Fragment).
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KRINGLE 2.

KRINGLE 3.

KRINGLE 4.

KRINGLE 5.

CHARGE RELAY SYSTEM.

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CHARGE RELAY SYSTEM.

CHARGE RELAY SYSTEM.

N-LINKED (GLCNAC. . .) (POT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 378; DB 1; Pred. No. 1.4e-31;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SERINE PROTEASE
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RESULT 10
HGF HUMAN
ID HGF H27
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           HGF HUMAN STANDARD; PRT; 728 AA. p14210; Q9BYL9; Q9UDU6; 01-JAN-1990 (Rel. 13, Created) 01-AUG-1991 (Rel. 19, Last sequence update) 15-SEP-2003 (Rel. 42, Last annotation update Hepatocyte growth factor precursor (Scatter (Hepatopoeiin A).
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PROSITE; PS50070; KRINGLE 2; 2.
PROSITE; PS50240; TRYPSIN DOM; PARTIAL.
PROSITE; PS00134; TRYPSIN HIS; PARTIAL.
PROSITE; PS00135; TRYPSIN SER; PARTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIMTS; PRO0018; KRINGLE.
PRINTS; PRO1505; PROTHROWBIN.
PRINTS; PRO1505; Kringle; 2.
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ENZYME REQULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN

ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO

ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO

FIBRIN. CANNOT BE ACTIVATED WITH STREPTOKINASE.

MISCELLANEOUS: PLASMIN IS INACTIVATED BY ALPHA-2-ANTIPLASMIN

IMMEDIATELY AFTER DISSOCIATION FROM THE CLOT.

SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY.

SIMILARITY: Contains 5 kringle domains.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SWISS-PROT entry is copyright. It is produced through a ceen the Swiss Institute of Bioinformatics and the EMBL
 sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pro; IPR000001; Kringle.
Pro; IPR003966; Prothrombin.
Pro; IPR001254; Ser_protease_Try.
PF00051; kringle; 2.
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; Blood coagulation; Kringle; Repeat.
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KRINGLE 5 (BY S
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5; Mismatches
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SEQUENCE FROM N.A.
MEDLINE=91340155; Pubm
Seki T., Hagiya M., Sh
"Organization of the h
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Birchmeier W.,
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hepatocyte growth factor.",
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Molecular cloning and growth factor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Miyazawa K., Tsubouchi H., Naka I
Arakaki N., Nakayama H., Hirono S
Gohda E., Daikuhara Y., Kitamura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nakamura T., Nishizawa T., Hagiya M
Sugimura A., Tashiro K., Shimizu S.
"Molecular cloning and expression o
Nature 342:440-443(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=91025062; PubMed=2145836;
Seki T., Ihara I., Sugimura A., Shimonishi M., Nishizawa
Asami O., Hagiya M., Nakamura T., Shimizu S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gene 102:213-219(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                              TIŜSUE=Embryonic fibroblast;
MEDLINE=91334393; PubMed=1831266;
Weidher K.M., Arakaki N., Hartmann G., Vandeke
Rieder H., Fonatsch C., Tsubouchi H., Hishida
                                                                                                                                                                                                         Miyazawa K., Kitamura A., Kitamura N.; "Structural organization and the transcription initiation site of the human hepatocyte growth factor gene."; Biochemistry 30:9170-9176(1991).
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                                 CARBOHYDRATE-LINKAGE SITE THR-476.
MEDLINE=93129192; PubMed=1482348;
Shimizu N., Hara H., Sogabe T., Sa
                                                                                        Biochem.
                                                                                                      MEDLINE=91207365; PubMed=1826837; Yoshiyama Y., Arakakai N., Naka D Yoshiyama H., Gohda E., Kitamura N Hishida T., Daikuhara Y.;
                                                                                                                                                                                 SIGNAL SEQUENCE CLEAVAGE SITE
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                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. Courtney L., Elliot
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                        Nakamura T., Shimizu S.
                                                                                                     native and recombinant
                                                                                                                                                                                                                                                           MEDLINE=91369928; PubMed=1832556;
                                                                                                                                                                                                                                                                       SEQUENCE OF 249-695 FROM
"Hepatocyte growth factor is linked on the alpha chain.";
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                                                                                      Biophys. Res.
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., Shimonishi M.,
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H., Hirono S.,
., Kitamura N.;
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Commun. 175:660-667(1991)
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Sakiyama O.,
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Tsubouchi
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              by O-glycosylated oligosaccharide
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                                         Ihara I.,
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h factor-encoding gene.";
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                                                                                                                                                            Kondo
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MEDLINE=99036858; PubMed=9817840;
Ultsch M., Lokker N.A., Godowski P.J., de Vos A.M.;
"Crystal structure of the NK1 fragment of human hepatocyte growth factor at 2.0-A resolution.";
Structure 6:1383-1393 (1998).
-i- FUNCTION: HGF IS A POTENT MITOGEN FOR MATURE PARENCHYMAL
HEPATOCYTE CELLS, SEEMS TO BE AN HEPATORPOPHIC FACTOR, AND ACTS
AS GROWTH FACTOR FOR A BROAD SPECTRUM OF TISSUES AND CELL TYPES.

IT HAS NO DETECTABLE PROTEASE ACTIVITY.
-i- SUBUNUT: DIMER OF AN ALPHA CHAIN AND A BETA CHAIN LINKED BY A
DISULFIDE BOND.
EMBT'
THEWS

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MEDLINE=98154323; PubMed=9493272;
Zhou H., Mazzulla M.J., Kaufama J.D., Stahl S.J., Wingfield P.T.,
Rubin J.S., Bottaro D.P., Byrd R.A.;
"The solution structure of the N-terminal domain of hepatocyte growth factor reveals a potential heparin-binding site.";
Structure 6:109-116(1998).
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"Structure-function analysis of hepatocyte growth factor:
identification of variants that lack mitogenic activity yet retain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Biochem. Biophys. Res. Commun. 189:1329-1335(1992)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIMILARITY: BELONGS TO PEPTIDASE FAMILY SIMILARITY: Contains 4 kringle domains.
D90334; B4
D90319; B4;
D90320; B4;
D90322; B4;
D90322; B4;
D90325; B4;
D90326; B4;
D90327; B4;
D90327; B4;
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D90331; B4;
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J. 11:2503-2510(1992).
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AAG53460.1; JOINED.
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RESULT 11
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DS Rattu
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InterPro; IPR003001; Kringle.
InterPro; IPR003001; PAN.
InterPro; IPR00314; PAN.
InterPro; IPR003609; PAN_app.
InterPro; IPR001254; Ser_protease_Try.
Pfam; PF00051; kringle; 4.
Pfam; PF00024; PAN; 1.
Pfam; PF00024; PAN; 1.
Pfam; PF00029; trypsin; 1.
PRINTS; PR00012; CHYMOTRYPSIN.
PRINTS; PR00018; KRINGLE.
PRODOm; PD000395; Kringle; 4.
SMART; SM00130; KR; 4
SMART; SM00130; KR; 4
SMART; SM00020; Tryp_SPc; 1.
SMART; SM00020; Tryp_SPc; 1.
PROSITE; PS00021; KRINGLE_1; 4.
PROSITE; PS00210; KRINGLE_2; 4.
PROSITE; PS00240; TRYPSIN DOM; 1.
PROSITE; PS00240; TRYPSIN DOM; 1.
                                                         HGF RAT STANDARI P17945; P17945; P17945; P17946; P17990 (Rel. 16, COLONOV-1990 (Rel. 16, I 28-FEB-2003 (Rel. 41, I Hepatocyte growth factor (Hepatopoeitin A).
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EMBL; M75981; AAG53460.
EMBL; M75982; AAG53460.
PIR; JH0579; JH0579.
PDB; 2HGF; 24-JUN-98.
PDB; 1HKT; 18-NOV-98.
PDB; 1NK1; 29-DEC-99.
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DISULFID
DISULFID
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SIGNAL
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GO; GO:0008083; F:growth factor activity; NAS
GO; GO:0007067; P:mitosis; NAS.
            Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chor
Mammalia; Eutheria; Rode
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEROPS; S01.976; -.
GlycoSuiteDB; P14210;
Genew; HGNC:4893; HGF.
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AAG53460.1;
AAG53460.1;
                                                                                                                                    STANDARD;
                                                                      16, Created)
16, Last sequence update)
41, Last annotation update)
factor precursor (Scatter factor)
             Chordata;
Rodentia;
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127
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Pred. No. 6.2e-19;
L2; Mismatches 30
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KRINGLE
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KRINGLE
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            Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
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InterPro; IPR001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR003014; pAN.
InterPro; IPR003609; pan_app.
InterPro; IPR003609; pan_app.
InterPro; IPR001254; Ser_protease_Try.
Pfam; PP00021; kringle; 4.
Pfam; PP00029; trypsin; 1.
Pfam; PP000089; trypsin; 1.
Pfam; PP000089; trypsin; 1.
PRINTS; PR000128; KRINGLE.
PRINTS; PR00018; KRINGLE.
PRODOM; PD000395; Kringle; 4.
SMART; SM00010; KR; 4.
SMART; SM00010; Tryp_SPc; 1.
SMART; SM00010; Tryp_SPc; 1.
PROSITE; PS00021; KRINGLE 2; 4.
PROSITE; PS00021; KRINGLE 3; 4.
PROSITE; PS000
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EMBL; X54400; CAA38266.1; -.
PIR; A35644; A35644.
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-I- FUNCTION: HGF IS A POTENT MITOGEN FOR MATURE PARENCHYMAL HEPATOCYTE CELLS, SEEMS TO BE AN HEPATOTROPHIC FACTOR, AND AC AS GROWTH FACTOR FOR A BROAD SPECTRUM OF TISSUES AND CELL TYP IT HAS NO DETECTABLE PROTEASE ACTIVITY.
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SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
STRAIN=Wistar; TISSUE=Liver;
STRAIN=Wistar; Dinhmed=2139229;
                                                                                                                                                                                                                                                                                              CHAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=91031482; PubMed=2146117;
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SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBISIMILARITY: Contains 4 kringle domains.
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495
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PAP.

KRINGLE 1.

KRINGLE 2.

KRINGLE 3.

KRINGLE 4.

SERINE PROTEASE-LIKE.

BY SIMILARITY.

BY SIMILARITY.

INTERCHAIN (BY SIMILARITY).

N-LINKED (GLCNAC. . .) (POTE
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    (GLCNAC. . .) (POTENTIAL).
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SEQUENCE
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Q08048; Q61662; Q64007;
Q1-NOV-1995 (Rel. 32, Created)
Q1-NOV-1995 (Rel. 32, Last sequence update)
Q8-FEB-2003 (Rel. 41, Last annotation update)
Q8-FEB-2003 (Rel. 41, Cast annotation update)
                                                                                                                                                      BIOCHIM. BIOPHYS. ACTA 1216:299-303(1993).

-I- FUNCTION: HOF IS A POTENT MITOGEN FOR MATURE PARENCHYMAL HEPATOCYTE CELLS, SEEMS TO BE AN HEPATOTROPHIC FACTOR, AN GROWTH FACTOR FOR A BROAD SPECTRUM OF TISSUES AND CELL TY HAS NO DETECTABLE PROTEASE ACTIVITY.

-I- SUBUNIT: DIMER OF AN ALPHA CHAIN AND A BETA CHAIN LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE=Mammary fibroblast;
MEDLINE=94183257; PubMed=8135822;
MEDLINE=94183257; PubMed=8135822;
Sasaki M., Nishio M., Sasaki T., Enami J.;
Sasaki M., Nishio M., Sasaki T., Enami J.;
Glantification of mouse mammary fibroblast-derived factor as hepatocyte growth factor.";
Biochem. Biophys. Res. Commun. 199:772-779(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia; NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                      MEDLINE=94363381; PubMed=8081873;
Lee C.C., Kozak C.A., Yamada K.M.;
"Structure, genetic mapping, and expression
 This SWISS-PROT entry is copyright. It is produced between the Swiss Institute of Bioinformatics and
                                                                                                                                                                                                                                   Liu Y., Michalopoulos G.K., Zarnegar R.; "Molecular cloning and characterization of cDNA hepatocyte growth factor.";
                                                                                                                                                                                                                                                                          MEDLINE=94060105; PubMed=8241272;
                                                                                                                                                                                                                                                                                                                                          "Structure, factor gene
                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mus musculus (Mouse)
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                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
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                                     SIMILARITY: BELONGS TO SIMILARITY: Contains 4
                                                                                                                             DISULFIDE BOND.
ALTERNATIVE PRODUCTS:
                                                                              Name=Short
                                                                                                        Name=Long;
                                                                                                                   Event=Alternative
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                                                                                         IsoId=Q08048-1;
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                                                                                                                                                                                                                                                                                                                                          Kozak C.A., Yamada I
, genetic mapping, a
e.";
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728
                                                                                                                                                                                                                                                                                                                              Commun. 1:101-111(1993).
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                                                   048-2; Sequence=VSP_005408;
BELONGS TO PEPTIDASE FAMILY
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656
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                                                                                          Sequence=Displayed
                                                                                                                   splicing; Named isoforms=2;
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                                       kringle
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Pred. No. 2e-18;
1; Mismatches
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Sciurognathi;
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thi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 1;
                                                      S1. PLASMINOGEN SUBFAMILY.
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RESULT 13
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Best Local
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Pfam; PF00084; PAN; 1.

Pfam; PF00089; trypsin; 1.

Pfam; PF00089; trypsin; 1.

PRINTS; PR00722; CHYMOTRYPSIN.

PRINTS; PR00018; KRINGLE.

PRODOM; PD000395; Kringle; 4.

SMART; SM00130; KR; 4.

SMART; SM00130; Tryp SPC; 1.

SMART; SM00020; Tryp SPC; 1.

PROSITE; PS00021; KRINGLE 1; 4.

PROSITE; PS00021; KRINGLE 2; 4.

PROSITE; PS50240; TRYPSIN DOM; 1.

Growth factor; Kringle; Glycoprotein; Sectional Alternative Sections Sectional Alternative Section 
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CONFLICT
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CARBOHYD
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EMBL; D10213; BAA01065.1; -.
EMBL; S71816; ABA31855.1; -.
EMBL; X72307; CAA51054.1; ALT_INIT.
EMBL; X72307; A60185.
                                                                                                                                                                                                                                                                     SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                       VARSPLIC
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D; MGI:96079; Hgf.
terPro; IPR001314; Chymotrypsin.
terPro; IPR000001; Kringle.
terPro; IPR003011; PAN.
terPro; IPR003609; Pan_app.
terPro; IPR001254; Ser_protease_Try.
                                                                                                                                      211
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                                                                                                                                                                 DCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNPDSGKQP
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                                                                                                                                                                                                                                                                               INTERCHAIN (BY SIMILARITY).

N-LINKED (GLCNAC. .) (POT

N-LINKED (GLCNAC. .) (POT

N-LINKED (GLCNAC. .) (POT

N-LINKED (GLCNAC. .) (POT
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KRINGLE 1.
KRINGLE 2.
KRINGLE 3.
KRINGLE 4.
SERINE PROTEASE-LIKE.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                    Score 249;
Pred. No. 2.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pyrrolidone on SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PYRROLIDONE
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                                                                                                                                                                                                                                                                       A0381FC497534328 CRC64;
                                                                                                     88
                                                                                                                                                                                                        Mismatches
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tent is in no
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InterPro; IPR001314; Chymotrypsin.
InterPro; IPR003014; PAN.
InterPro; IPR003014; PAN.
InterPro; IPR003069; Pan_app.
InterPro; IPR00369; Pan_app.
InterPro; IPR003569; Prothrombin.
InterPro; IPR001254; Ser_protease_Try.
Pfam; PF00051; kringle; 4.

Pfam; PF00051; kringle; 4.

Pfam; PF00089; trypsin; 1.

Pfam; PF00089; trypsin; 1.

PRINTS; PR00702; CHYMOTRYPSIN.
PRINTS; PR00018; KRINGLE; 4.

PRINTS; PR00018; KRINGLE; 4.

SMART; SM000130; KR; 4.

SMART; SM000130; KR; 4.

SMART; SM00020; Tryp_SPo; 1.

PROSITE; PS00021; KRINGLE 1; 4.

PROSITE; PS00021; KRINGLE 2; 4.

PROSITE; PS00021; KRINGLE 3; 4.
Kringle;
SIGNAL
CHAIN
DOMAIN
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a c between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fo entities requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Friezner Degen S.J., Stuart L.A., Han S., Jamison C.S.;
"Characterization of the mouse cDNA and gene coding for a h
growth factor-like protein: expression during development."
Biochemistry 30:9781-9791(1991)
-1- FUNCTION: PROBABLY HAS NO PROTEOLYTIC ACTIVITY, SINCE C
CHARACTERISTIC OF SERINE PROTEASES CATALYTIC SITES ARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
STRAIN=BALB/c; TISSUE=Liver;
MEDLINE=92002017; PubMed=1832957;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HGFL_MOUSE STANDARD; PRT; 716 AA. P26928; 01-AUG-1992 (Rel. 23, Created) 01-AUG-1992 (Rel. 23, Last sequence update) 15-SEP-2003 (Rel. 42, Last annotation update) Hepatocyte growth factor-like protein precursor
                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; M74180; AAA50166.1;
EMBL; M74181; AAA50167.1;
PIR; A40332; A40332.
HSSP; P00747; IKRN.
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Mammalia; Eutheria; Rodentia;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STABLE AFTERWARDS.
PTM: MAY BE CLEAVED AFTER AA 488,
HELD TOGETHER BY DISULFIDE BONDS,
POLYPEPTIDES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADRENAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE SPECIFICITY: LIVER. LOWER LEVELS IN LUNG, PLACENTA AND
; Glycoprotein;
1 18
19 716
19 719
19 109
110 186
191 268
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PAP.
KRINGLE
KRINGLE
                                          protease homolog; Repeat; Signal.
POTENTIAL.
HEPATOCYTE GROWTH FACTOR-LIKE PROT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FAMILY S1.
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                                               FACTOR-LIKE PROTEIN
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Query Match
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Matches 43
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DISULFID
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15-DEC-1998
15-DEC-1998
28-FEB-2003
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CARBOHYD
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chor
Mammalia; Eutheria; Ceta:
Bovidae; Caprinae; Ovis.
BORI TaxID=9940;
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                                                                                                                                                                                                                                                                                                                SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VPEGCYHGSGEQYRGSVSKTRKGVQCQHWSSETPHKPQFTPTSAPQAGLEANFCRNPDGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Rel. 37, Created)
(Rel. 37, Last sequence update)
(Rel. 41, Last annotation update)
(EC 3.4.21.7) (Fragment).
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Α,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chordata; Craniata; Vertebrata; Euteleostomi; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       44.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        80588 MW;
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BY SIMILARITY.

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KRINGLE 4.

SERINE PROTEASE-LIKE.

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BY SIMILARITY.
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Pred. No. 1.5e
9; Mismatches
      ferential cleavage: Lys-|-Xaa > Arg-|-Xaa;
trypsin. Converts fibrin into soluble
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9;
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Best Local S
Matches 43
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R InterPro; IPR001314; Chymotrypsin.
R InterPro; IPR001001; Kringle.
R InterPro; IPR001254; Ser_prothease_Try.
R InterPro; IPR001254; Ser_prothease_Try.
R InterPro; IPR001254; Ser_prothease_Try.
R Pfam; PF00051; kringle; 1.
R Pfam; PF00069; trypsin; 1.
R PRINTS; PR00120; CHYMOTRYPSIN.
R PRINTS; PR01505; PROTHROMBIN.
R PRINTS; PR01505; PROTHROMBIN.
R PRINTS; PR01505; PROTHROMBIN.
R PRINTS; PR010305; KRINGLE; 1.
R SMART; SM00130; KR; 1.
R PROSITE; PS00130; KR; 1.
R PROSITE; PS00013; TRYPSIN_DOM; 1.
R PROSITE; PS00134; TRYPSIN_DOM; 1.
R PROSITE; PS00134; TRYPSIN_SER; 1.
R PROSITE; PS00134; TRYPSIN_SER; 1.
R PROSITE; PS00135; TRYPSIN_SER; 1.
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P26927; Q13350; Q14870;
01-AUG-1992 (Rel. 23, Created)
01-AUG-1992 (Rel. 23, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation updatte)
Hepatocyte growth factor-like protein precursor (M.
Stimulatory protein) (MSP) (Macrophage stimulating
MST1 OR HGFL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -
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                   SEQUENCE FROM N.A. TISSUE=Liver;
                                                                       NCBI_TaxID=9606;
[1]
                                                                                                                 Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HSSP; P00747; 5HPG.
MEROPS; S01.233; -.
MEDLINE=92002016; PubMed=1655021;
                                                                                                                                                                Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    products.

ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN

ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO

FIBRIN. CANNOT BE ACTIVATED WITH STREPTOKINASE.

MISCELLANBOUS: PLASMIN IS INACTIVATED BY BLIPHA-2-ANTIPLASMIN

IMMEDIATELY AFTER DISSOCIATION FROM THE CLOT.

SIMILARITY: BELONGS TO PETIIDASE FAMILY S1. PLASMINOGEN SUBFAMILY.

SIMILARITY: Contains at least 2 kringle domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B61545; B61545.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 KSPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQ-RTPENYPNAGLTENYCRN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PDSG-KQPWCYTTDPCVRWEYCNLTQCSET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PDGDVNGPWCYTTNPRKT.FDYCDIPQCESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ENPPEADCMLGIGKGYRGKKATTVAGVPCQEWAAQEPHRHGIFTPETNPRAGLEKNYCRN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1141 > 1141 | 141 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 114 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Serine protease;
deling; Blood co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           140
>343
17
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                                                                                                                 Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     37662 MW; 8DF6EBA92D596EE0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             43.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              coagulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HEAVY CHAIN A.
LIGHT CHAIN A.
KRINGLE 4.
KRINGLE 5.
SERINE PROTEASE.
CHARGE RELAY SYSTEM.
CHARGE RELAY SYSTEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 236; DB 1;
Pred. No. 2.6e-17;
                                                                                                                 Craniata; Vo
Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kringle; Zymogen; Repeat
                                                                                                                                            Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            88
                                                                                                                      Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 343;
                                                                                                                                                                                                               (Macrophage ng protein)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67
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human chromosome

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Pfam; PF00089; trypsin; 1.

PRINTS; PR00722; CHYMOTRYPSIN.

PRINTS; PR00718; KRINGLE.

PRINTS; PR001318; KRINGLE.

PRODOM; PR000395; Kringle; 4.

SMART; SM00130; KR; 4.

SMART; SM00070; Tryp_SPc; 1.

SMART; SM00020; Tryp_SPc; 1.

PR0SITE; PS00071; KRINGLE 1; 4.

PROSITE; PS00770; KRINGLE 2; 4.

PROSITE; PS50240; TRYPSIN_DOW; 1.

Kringle; Glycoprotein; Serine pro
 SIGNAL
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EMBL; U37055; AAC50471.1; -.
EMBL; L11924; AAA59872.1; -.
PIR; A40331; A47116.
HSSP; P00747; 2PK4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=93340141; PubMed=8393443;
Yoshinura T., Yuhki N., Wang M.H., Skeel A., Leonard E.J.;
Yoshinura T., Yuhki N., Wang M.H., Skeel A., Leonard E.J.;
Yoshinura T., Yuhki N., Wang M.H., Skeel A., Leonard E.J.;
Proteins equencing, and expression of human macrophage stimulating protein (MSP, MST1) confirms MSP as a member of the family of kringle proteins and locates the MSP gene on chromosome 3.";
J. Biol. Chem. 268:15461-15468 (1993).
-i- FUNCTION: PROBABLY HAS NO PROTEASES CATALYTIC SITES ARE NOT CHARACTERISTIC OF SERINE PROTEASES CATALYTIC SITES ARE NOT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Han S., Stuart L.A., Friezner Degen S.J.;
"Characterization of the DNF15S2 locus on human chromosom identification of a gene coding for four kringle domains homology to hepatocyte growth factor.";
Biochemistry 30:9768-9780(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEROPS; S01.975; -.
Genew; HGNC:7380; MST1.
MIM; 142408; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PTM: MAY BE CLEAVED AFTER AA 484, TO YIELD A TWO-CHAIN MOLECULE HELD TOGETHER BY DISULFIDE BONDS, OR TWO SEPARATE POLYPEPTIDES. SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY. SIMILARITY: Contains 4 kringle domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CONSERVED
                                                                                                                                                                                                                                                                                                                                                                                         j IPR001314; Chymotrypsin.
j IPR000001; Kringle.
j IPR003014; PAN.
j IPR003569; Pan app.
j IPR003966; Prothrombin.
j IPR001254; Ser protease_T.
F00051; kringle; 4.
  19
19
32
110
191
191
283
370
484
484
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1131
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711
109
186
268
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361
448
711
78
186
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186
268
                                                                                                                                                                                                                                                                                                                                                                                                            Ser_protease_Try.
le; 4.
PAP.

KRINGLE 1.

KRINGLE 2.

KRINGLE 3.

KRINGLE 4.

SERINE PROTEASE-LIKE.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.
                                                                                                                                                                          POTENTIAL. HEPATOCYTE
                                                                                                                                                                                                                   protease homolog; Repeat;
                                                                                                                                                                            GROWTH
                                                                                                                                                                            FACTOR-LIKE PROTEIN
                                                                                                                                                                                                                      Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of kringle
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Best Local S
Matches 42
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SEQUENCE
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                                                                                                                                              VARIANT
428
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                                                                    Similarity
GPWCYTMDPRTPFDYCALRRCADDQ
            - PWCYTTDPCVRWEYCNLTQCSETE
                             ÓDCYHGAGEQYRGTVSKTRKGVQCQRWSAETPHKPQFTFTSEPHAQLEENFCRNPDGDSH
                                            QDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNPDSGKQ
                                                                                         623
711 AA;
                                                                                                                                               Conservative
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                                                                                                                               212
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                                                            10;
                                                                                                                                                N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
Y -> C
                                                                                         C -> F.

/FTId=VAR 006632.

E -> K (IN dbsnP:7798).

E -> F (IN REF. 2).

L -> F (IN REF. 2).
                                                                                                                                                                            INTERCHAIN (BY INTERCHAIN)
BY SIMILARITY
                                                           Score 231.5;
Pred. No. 1.6e
0; Mismatches
                                                                                                                               /FTId=VAR_006631.
452
              89
                                                                    .6e-16
                                                                           DB 1;
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                                                                                           CRC64;
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(POTENTIAL)
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203.5	207.5	219	226.5	227.5	231.5	232	232.5	232.5	236	236	236.5	237.5	238.5	241.5	242.5	242.5	243	244	246	247.5	248.5	248.5	249.5	249.5	250	250.5	251	252
37.8	38.5	40.6	42.0	42.2	42.9	43.0	43.1	43.1	٠	43.8		44.1	44.2	44.8		45.0	45.1	45.3	45.6	45.9	46.1	46.1	46.3	46.3	46.4	46.5	46.6	46.8
930	90	95	648	567	215	726	385	211	704	53	709	109	716	716	210	208	728	716	717	296	313	209	948	946	728	710	334	290
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Q8av69 xenopus tae	μ.	powo	Q9h1v4 homo sapien	Q13208 homo sapien	O42341 gallus gall	Q90978 gallus gall	Q25101 herdmania m	O55027 mus musculu	Q90865 gallus gall	Q9umi2 homo sapien	Q90zn6 brachydanio	Q9n1b8 ovis aries	P70521 rattus norv	Q91xg8 mus musculu	Q13494 homo sapien	Q9bym0 homo sapien	Q9bh09 felis silve	-	P70006 xenopus lae	Q14519 homo sapien	Q9pu78 crocodylus			Q07153 torpedo cal	യന8 യന8	Q91402 xenopus. he	046507 papio hamad	

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Query Match Best Local Similarity	SEQUENCE	NON_TER	NON TER	Glycoprote	PROSITE; P	PROSITE; P	SMART; SMO	ProDom; PD	PRINTS; PR	Pfam; PF00	InterPro:		EMBL; AF15	EMBL; AF15	-!- SIMILA	Hum. Mol.	different	types 6 to	"Single nu	Ogorelkova	MEDLINE=21	SEQUENCE FROM N.A.	Ξ	NCBI_TaxID=9606;	Mammalia; Eutheria;	Eukaryota; Metazoa;	Homo sapie	APOA.	Apolipopro	01-MAR-2003	01-MAY-2000	01-MAY-2000	Q9UIR6;	Q9UIR6	RT 1
milarity	113 AA;	113 1	1	in; Kringl	PROSITE; PS50070; KRINGLE_2;	S00021; KR	SMART; SM00130; KR; 1.	ProDom; PD000395; Kringle;	PRINTS; PR00018; KRINGLE.	Pfam; PF00051; kringle; 1.	InterPro: IPR000001; Kringle.	47; 2PK4.	8660; AAF0	AF158661; AAF03679.1;	RITY: CONT	Genet. 10:	patterns i	10 domain	cleotide p	M., Kraft	181705; Pu	ROM N.A.		=9606;			Homo sapiens (Human).		Apolipoprotein(a) (Fragment).	3 (TrEMBLrel.	0 (TrEMBLrel.	0 (TrEMBLrel.		PRELIMINARY;	
100.0%;	12697 MW;	13	-	Glycoprotein; Kringle; Lipoprotein.	INGLE_2; 1	INGLE_1; 1		ingle; 1.	NGLE.	le; 1.	Kringle.		AF158660; AAF03679.1; JOINED.	3679.1;	- I - SIMILARITY: CONTAINS 1 KRINGLE	Hum. Mol. Genet. 10:815-824(2001).	n Africans	types 6 to 10 domain affect Lp(a) plasma concentrations	"Single nucleotide polymorphisms in exons of the apo(a)	Ogorelkova M., Kraft H.G., Ehnholm C., Utermann G.;	MEDLINE=21181705; PubMed=11285247;					hordata;	•		ragment).	23,	13,	13,			
Score Pred.	51D44			tein.	•	•							INED.			01).	and C	(a) pl	ms in	holm C	247;				Catarr	Crania					st seq	Created)		PRT;	
539; No.	61D9														DOMAIN		auca	asma	exon	; G					hini	ta;				otat	nenc			113	
DB 4; 1e-52;	51D4461D9C66312E														Z		sians.";	concent	s of the	termann					; Homini	Craniata; Vertebrata;				annotation update)	Last sequence update)			AA.	
Length 113;	CRC64;																			<u>ត</u> . ;					Catarrhini; Hominidae; Homo.					te)	٦				
113;																		and have	kringles						ō	Euteleostomi;									
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Best Local S
Matches 71
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MEDLINE-21181705; PubMed-11285247;

MEDLINE-21181705; PubMed-11285247;

Ogorelkova M., Kraft H.G., Ehnholm C., Utermann G.;

Ogorelkova M., Kraft H.G., Ehnholm C., Utermann G.;

"Single nucleotide polymorphisms in exons of the apo(a) kr:

types 6 to 10 domain affect Lp(a) plasma concentrations and
different patterns in Africans and Caucasians.";

Hum. Mol. Genet. 10:815-824(2001).

-1- SIMILARITY: CONTAINS 1 KRINGLE DOMAIN.

EMBL; AF158659; AAF03678.1; JOINED.

HSSP; P00747; 2PK4.

TATERPO. TERORODOLI. Kringle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                          Q15146;
Q15146;
01-NOV-1996
01-NOV-1996
01-MAR-2003
Plasminogen I
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Q9UIR7;
01-MAY-2000
01-MAY-2000
01-MAR-2003
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NON_TER
NON_TER 11
            Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9606;
                                                                     Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF00051; kringle; 1.
PRINTS; PR00018; KRINGLE.
ProDom; PD000395; Kringle; 1.
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Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE; PS00021; KRINGLE_1; 1. PROSITE; PS50070; KRINGLE_2; 1.
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APOA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                      KSPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNP
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(TrEMBLrel. 13, Last sequence update)
(TrEMBLrel. 23, Last annotation update)
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Primates;
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5; Mismatches 14
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                                    Craniata; Vertebrata; l
Catarrhini; Hominidae;
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                                    Euteleostomi; Homo.
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and have
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SWART; SM00473; PAN AP; 1.

SWART; SM000473; PAN AP; 1.

REMART; SM00020; TYP, SPC; 1.

REMART; SM00131; KRINGLE 1; 5.

RROSITE; PS00021; KRINGLE 2; 5.

RROSITE; PS0070; KRINGLE 2; 5.

RROSITE; PS00134; TRYPSIN HIS; 1.

RROSITE; PS00134; TRYPSIN SER; 1.

ROSITE; PS00135; TRYPSIN SER; 1.

ROSITE; PS00134; TRYPSIN SER; 1.

ROSITE; PS00240; TRYPSIN SER; 1.

ROSITE; PS00134; TRYPSIN SER; 1.

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Q9UIR8;
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01-MAY-2000 (
01-MAR-2003 (
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                 SEQUENCE FROM N.A.

MEDLINS=21181705; PubMed=11285247;

MEDLINS=21181705; PubMed=11285247;

Ogorelkova M., Kraft H.G., Ehnholm C., Utermann G.;

"Single nucleotide polymorphisms in exons of the apo(a)

types 6 to 10 domain affect Lp(a) plasma concentrations

different patterns in Africans and Caucasians.";

Hum. Mol. Genet. 10:815-824(2001).

-!-SIMILARITY: CONTAINS 1 KRINGLE DOMAIN.

EMBL; AF158656; AAF03677.1; -.
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InterPro;
InterPro;
InterPro;
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01-MAY-2000 (TrEMBLrel. 13, L
01-WAR-2003 (TrEMBLrel. 23, L
Apolipoprotein(a) (Fragment).
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                                                                                                                                                                                                                                               Homo sapiens (Human).
Eukaryota; Metazoa; C
Mammalia; Eutheria; P
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PRINTS; PR00518; KRINGLE.
PRINTS; PR01505; PROTHROMBIN.
Probom; PD000395; Kringle; 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; M74220;
HSSP; P00747;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Fibrinolysis 0:0-0(1991)
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                                                                                                                                                                                                                          NCBI_TaxID=9606;
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PF00024; PAN; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IPR003014; PAN.
IPR003609; Pan_app.
IPR003966; Prothrombin.
IPR001254; Ser_protease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IPR001314; Chymotrypsin.
IPR000001; Kringle.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TY: CONTAINS 5 I ; AAA36451.1; -. ; 2PK4.
                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Robinson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chapman C.G.,
                                                                                                                                                                                                                                                 Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  78.5%;
78.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 J.H.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KRINGLE DOMAINS
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                                                                                                                                                                                                                                                                                                                                                       Last sequence up
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                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 423; DB 4;
Pred. No. 8.2e-39;
                                                                                                                                                                                                                                                 Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           plasminogen
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
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and have
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EMBL; AF158655; AAF03677.1; JOINED. HSSP; P00747; 2PK4.

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RESULT 5
                                                   SO TENERS REPRESENTATION OF THE PROPERTY OF TH
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Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
Query Match
                                                                                                                    SMART; SM00130; KR; 2.

SMART; SM0020; Tryp_SPc; 1.

SMART; SM0020; Tryp_SPc; 1.

PROSITE; PS90021; KRINGLE 1; 2.

PROSITE; PS50070; KRINGLE 2; 2.

PROSITE; PS50240; TRYPSIN_DOM; 1.

PROSITE; PS00135; TRYPSIN_SER; 1.

Glycoprotein; Hydrolase; Kringle; Li
                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR001254; Ser protease_Try.
Pfam; PF00051; kringle; 2.
Pfam; PF00089; trypsin: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR000001; Kringle.
Pfam; PF00051; kringle; 1.
PRINTS; PR00018; KRINGLE.
ProDom; PD000395; Kringle; 1.
SMART; SM00130; KR; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases -: SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. -: SIMILARITY: CONTAINS 2 KRINGLE DOMAINS. EMBL; AF025691; AAB97886.1; -. HSSP; P00747; 2PK4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cox L.A., Jett C., Hixson J.E.;
"Molecular Basis of the Apolipoprotein (a) Null Phenotype:
Site Mutation is Associated with Deletion of a Single Exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Papio hamadryas (Hamadryas baboon).
Eukaryota; Metazoa; Chordata; Crani
Mammalia; Eutheria; Primates; Catar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-JUN-1998 (TrEMBLrel. 06, 01-JUN-1998 (TrEMBLrel. 06, 01-MAR-2003 (TrEMBLrel. 23,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Glycoprotein; Kringle; Lipoprotein.

NON TER 1 1 1

NON TER 105 AB; 11882 MW; 6ECB
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                                                                                                                                                                                                                                                                                                Pfam, PF00089; trypsin; 1.
PRINTS, PR00782; CHYMOTRYPSIN.
PRINTS, PR00018; KRINGLE.
ProDom, PD000395; Kringle; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Allele."
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROSITE; PS00021; KRINGLE_1; 1. PROSITE; PS50070; KRINGLE_2; 1.
                                                                                                     Serine protease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
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                                                   454 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11882 MW; 6ECB6C02CD30EFA2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chordata; Craniata; Vertebrata; Euteleostomi; Primates; Catarrhini; Cercopithecidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             78.3%;
                                                   50041 MW;
     76
     . 68;
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Last annotation update)
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Pred. No. 1.2e-39;
     Score
                                                      974E30744C187B2F
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                                                                                                                            Lipoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            454
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     В
     <u>.</u>
                                                                                                                            Protease;
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  Length 454;
                                                   CRC64;
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in a Null
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RESULT 7
Q8WMR1
ID Q8WM
AC Q8WM
DT 01-M
DT 01-M
DT 01-M
DT 01-M
CT Plas
OC Euka
OC Mamm
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Best Local
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                                                                          O8WMR1
O8WMR1;
O1-MAR-2002 (TrEMBLrel. 2
O1-MAR-2002 (TrEMBLrel. 2
O1-MAR-2003 (TrEMBLrel. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9UIR5
Q9UIR5;
Plasminogen (Fragment).
Canis familiaris (Dog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Glycoprotein; Kringle; Lipoprotein.
NON_TER 1 1 1
NON_TER 113 113
SEQUENCE 113 AA; 12685 MW; F3D6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-MAY-2000 (TrEMBLrel. 13,
01-MAY-2000 (TrEMBLrel. 13,
01-MAR-2003 (TrEMBLrel. 23,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00051; kringle; 1.
PRINTS; PR00018; KRINGLE.
ProDom; PD000395; Kringle; 1.
SMART; SM00130; KR; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE; PS00021; KRINGLE_1; 1. PROSITE; PS50070; KRINGLE_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Apolipoprotein(a) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nterPro; IPR000001; Kringle.
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                                                                                                                                                                                                                                                                     DADTGPWCFTMDPSIRWEYCNLTRCSDTE
                                                                                                                                                                                                                                                                                                DSGKQPWCYTTDPCVRWEYCNLTQCSETE
                                                                                                                                                                                                                                                                                                                                                                           DADTGPWCFTMDPSVRWEYCNLTRCSDTE
                                                                                                                                                                                                                                                                                                                                                   QTPVVRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                113
12685 MW; F3D65681D9B5253A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     75.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          77.5%;
                                                                                20,
20,
23,
                                                                                                                                                                                                                                                                                                                                                                                                                                    10;
                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 409; DB Pred. No. 3.5e 10; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Last sequence up
                                                                                Created)
Last sequence update)
Last annotation updat
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8; Mismatches 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        113
                                                                                                                                                                   359
                                                                                                                                                                                                                                                                                                                                                                                                                          DB 4;
3.5e-38;
12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       183
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      Euteleostomi;
Canis.
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and have
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Q289117 8
Q28911 ID Q2891
ID Q289
AC Q
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Best Local Similarity
Matches 62; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INTERPOSE PRODOMS PRODOMS PRODOMS PRODOMS PRODOMS PRODOMS PROPOSE PROP
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01-NOV-1996
01-MAY-1999
01-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.

MEDLINE-95395387; PubMed-7666007;

Ramharack R., Spahr M.A., Hicke G.W., Kieft K.A., Brammer D.W.,

Minton L.L., Newton R.S.;

"Gemfibrozil significantly lowers cynomolgus monkey plasma

"Gemfibrozil significantly lowers apolipoprotein[a] mRNA levels.";

J. Lipid Res. 36:1294-1304 (1995).

J. Lipid Res. 36:1294-1304 (1995).
Glycoprotein; Kringle; Lipoprotein.
NON TER 145 145
SEQUENCE 145 AA; 16097 MW; 0D2D
                                                                                                                                                                                         Pfam, PF00051; kringle; 1.
PRINTS; PR00018; KRINGLE.
ProDom; PD000395; Kringle; 1.
SMART; SM00130; KR; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Macaca fascicularis (Crab eating macaque) (Cynomolgus monkey).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-NOV-1996 (TrEMBLrel. 01, Created)
01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation updat
Apolipoprotein[a] (Fragment).
APOLIPOPROTEIN[A]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Glycoprotein; Kringle.
NON_TER 1 1
NON_TER 359 359
SEQUENCE 359 AA; 41:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
Pirie-Shepherd S.R., Coffman K.T.,
Folkman J., Waters D.J.;
                                                                                                                                                                                                                                                                                                                                                                                       EMBL; S79621; AAD14312.1;
HSSP; P00747; 2PK4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cercopithecinae; Macaca.
NCBI_TaxID=9541;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q28911
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PROSITE; PS50070; KRINGLE_2; 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (DEC-2001) to the EMBL/GenBank/DDBJ databases
                                                                                                                 PROSITE; PS00021; KRINGLE_1; 1. PROSITE; PS50070; KRINGLE_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SMART; SM00130; KR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=9615;
                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR000001; Kringle.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Angiostatin is Detectable in the Urine of Dogs with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        335 DADKSPWCYTTDPSVRWEFCNLRKC 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DSGKQPWCYTTDPCVRWEYCNLTQC 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QTPVVQECYHGNGQSYRGTSSTTITGRKCQSWSSMTPHRHEKTPEHFPEAGLTMVYCRNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               72.7%;
llarity 72.9%;
Conservative 1
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Pred. No. 9.9e-36;
3; Mismatches 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            776D35F4AB0BDD9E CRC64;
        0D2DA20A06A5DD87 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₿
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
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R InterPro; IPROULIQUO; COMMINGER PEAM; PFO00051; Kringle; 5.

)R Pfam; PF000024; PAN; 1.

)R Pfam; PF000089; trypsin; 1.

DR PRINTS; PR00018; KRINGLE; 1.

DR PRINTS; PR00018; FROTHROMBIN.

DR PRODOM; PD000395; Kringle; 5.

DR PROSITE; PS000031; KRINGLE 1; 5.

DR PROSITE; PS00038; SOMATOTROPIN 2; 1.

DR PROSITE; PS50038; SOMATOTROPIN 2; 1.

DR PROSITE; PS00134; TRYPSIN JOM; 1.

DR PROSITE; PS00135; TRYPSIN JOM; 1.

DR PROSITE; PS00135; TRYPSIN SER; 1.
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Best Local S
Matches 67
                                        Query Match
Best Local S
Matches 62
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01-DEC-2001
01-DEC-2001
01-MAR-2003
                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                           InterPro; IPR001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR003014; PAN.
InterPro; IPR003066; Prothrombin.
InterPro; IPR001254; Ser protease.
InterPro; IPR001400; Somatotropin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q91WJ5
                                                                                                                                                                                                                                                                                                                                                                                            Brathwaite M., Waeltz P., Qian Y.,
                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=129/Sv;
                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Strausberg
                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plasminogen.
                                                                                                                                                                                                                                                                                                                                                                                  Nagaraja R.;
                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                        "Genomic Sequence Analysis in the Mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
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                                         62;
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                                                   Similarity
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            QTPVVQECYQSDGQSYRGTSSTT1TGKKCQSWAAMFPHRHSKTPENFPDAGLEMNYCRNP
                                                                                                                                                                                                                                                                                                                                                                                                                                       (OCT-2001) to the
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (TrEMBLrel.
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                                         Conservative
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                                                  72.0%;
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19,
23,
                                         12;
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Last sequence update)
Last annotation update)
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EMBL/GenBank/DDBJ databases.
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Pred. No. 4.8e-36;
                                         Score 388; DB 11;
Pred. No. 6.7e-35;
2; Mismatches 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                             Dudekula
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                                                                                                                                                                                                                                                                                                                                                                                              Schlessinger D.,
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                                                              Length
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                                            Indels
                                                                 812;
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RESULT 11
Q9ROW3
ID Q9ROW
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DT 01-M2
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RP SEQUI
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Best Local S
Matches 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00051; kringle; 1.
PRINTS; PR00018; KRINGLE.
PRODOM; PD000395; Kringle; 1.
SMART; SM00130; KR; 1.
SMOSITE; PS00021; KRINGLE 1; 1.
PROSITE; PS50070; KRINGLE 2; 1.
Glycoprotein; Kringle.
SEQUENCE 132 AA; 14886 MW;
                                                                                                                                                                                                                                                                               Q9R0W3;
Q9R0W3;
01-MAY-2000
01-MAY-2000
01-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q16609;
Q16609;
01-NOV-1996
01-NOV-1996
01-MAR-2003
                                                                                                                                    Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=10116;
                                                                                                                                                                                                               Rattus norvegicus (Rat).
                                                                                                                                                                                                                                        Plasminogen
PLASMINOGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; U19518; AAA85693.1; -.
EMBL; U19517; AAA85692.1; -.
HSSP; P00747; 1PMK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a single kringle domain.";
Arterioscler. Thromb. Vasc. Biol. 15:65-70(1995).
-!- SIMILARITY: CONTAINS 1 KRINGLE DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Byrne C.D., Schwartz K., Lawn R.M.;
"Loss of a splice donor site at a 'skipped exon'
to apolipoprotein(a) leads to an mRNA encoding a
Bangert K., Johnsen A.H., Thorsen S.; "Rat plasminogen: cDNA and gene structure."; Submitted (MAY-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (Human)
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APOARGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=9606;
                                                                      TISSUE=Liver;
                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=95268939; PubMed=7749817;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR000001; Kringle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APOARGC) .
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GKQPWCYTTDPCVRWEYCNLTQCSETE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SAGPWCYTTDPNVRWEYCNLTRCSDDE 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PSVQECYHSNGQSYRGTYFTTVTGRTCQAWSSMTPHQHSRTPEKYPNDGLISNYCRNPDC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DGDKGPWCYTTDPSVRWEYCNLKRCSET
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                                                                                                                                                                                                                                     (TrEMBLrel. 13, Created)
(TrEMBLrel. 13, Last sequence update)
(TrEMBLrel. 23, Last annotation update)
(Tremblrel. 23, Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chordata;
Primates;
                                                                                                                                                                 Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14886 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               70.5%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 380; DB 4;
Pred. No. 7.3e-35;
                                                                                                                                                              Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
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RESULT 12
01878
JID 01878
AC 01878
AC 01878
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DT 01-MAD
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OC EUACAT
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DR EMBL;
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Best Local S
Matches 61
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Pfam; PF00052; PAN; 1.

Pfam; PF00069; trypsin; 1.

Pfam; PF00022; CHYMOTRYPSIN.

PRINTS; PR00722; CHYMOTRYPSIN.

PRINTS; PR01505; PROTHROMBIN.

PRODOm; PD000395; Kringle; 5.

SMART; SM00130; KR; 4

SMART; SM000473; PAN AP; 1.

SMART; SM00020; Tryp_SPc; 1.

SMART; SM00020; Tryp_SPc; 1.

PROSITE; PS00021; KRINGLE 1; 5.

PROSITE; PS00038; SOMATOTROPIN 2; 1.

PROSITE; PS00134; TRYPSIN DOM; 1.

PROSITE; PS00134; TRYPSIN SER; 1.

PROSITE; PS00135; TRYPSIN SER; 1.

PROSITE; PS00136; TRYPSIN SER; 1.

PROSITE; PS00136; TRYPSIN SER; 1.
                                                                                                                                                                                                                                                                                                                                   O18783;
O1-JAN-1998
O1-JAN-1998
O1-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHAIN
SEQUENCE
MEDLINE=9804511; PubMed=9342350;
Lawn R.M., Schwartz K., Patthy L.;
"Convergent evolution of apolipoprotein(a) in primates
Proc. Natl. Acad. Sci. U.S.A. 94:11992-11997(1997).
-!- SIMILARITY: CONTAINS 5 KRINGLE DOMAINS.
EMBL; AF012297; AAB65760.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROSITE; PS50240; TRYPSIN_DOM; 1.
PROSITE; PS00134; TRYPSIN_HIS; 1.
PROSITE; PS00135; TRYPSIN_SER; 1.
Glycoprotein; Hydrolase; Kringle; Protease; Serine protease;
SIGNAL 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR003966; Prothrombin.
InterPro; IPR001254; Ser_protease_
InterPro; IPR001400; Somatorrom
Pfam; PF00051 L-
                                                                                                                                            SEQUENCE FROM
TISSUE=Liver;
                                                                                                                                                                                                       NCBI_TaxID=9315;
                                                                                                                                                                                                                                          Eukaryota; Metazoa; C
Mammalia; Metatheria;
                                                                                                                                                                                                                                                                                    Macropus eugenii (Tammar wallaby).
                                                                                                                                                                                                                                                                                                               Plasminogen.
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"Identification of the rat Heymann n
receptor site for plasminogen.";
J. Biol. Chem. 266:10825-10829(1991)
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SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; AJ242649; CAB46014.1; -. HSSP; P00747; 1PMK.
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InterPro; IPR000001; Kringle.
InterPro; IPR003014; PAN.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY: CONTAINS 5 KRINGLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    429
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 KSPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                  FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNDQRGPWCFTTDPSVRWEYCNLKRCSETGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DSGKQ-PWCYTTDPCVRWEYCNLTQCSETESG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QTPVVQECYQGNGKSYRGTSSTTNTGKKCQSWVSMTPHSHSKTPANFPDAGLEMNYCRNP
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812 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
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                                                                                                                                                                                                                                       Chordata; Craniata; Vertebrata;
a; Diprotodontia; Macropodidae; N
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Pred. No. 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
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                                                                                                                                                                                                                                                                                                                                     update)
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                                                                                                                                                                                                                                                                  Euteleostomi;
                                                                            and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            812;
                                                                         hedgehog.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
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Best Local S
Matches 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R Pfam; PF00051; kringle; 5.

R Pfam; PF00024; PAN; 1.

R Pfam; PF00024; PAN; 1.

R PF1NTS; PR00024; CHYMOTRVPSIN.

R PRINTS; PR00018; KRINGLE.

R PRINTS; PR01505; PROTHROMBIN.

R PRODOM; PD000395; Kringle; 5.

R SMART; SM000395; Kringle; 5.

R SMART; SM00031; TXYD SPC; 1.

R SMART; SM00031; TXYD SPC; 1.

R SMART; SM00020; TXYD SPC; 1.

R SMART; SM00020; TXYD SPC; 1.

R SMART; PS00021; KRINGLE 1; 5.

R PROSITE; PS00021; KRINGLE 1; 5.

R PROSITE; PS50240; TRYPSIN DOM; 1.

PROSITE; PS50134; TRYPSIN HIS; 1.

R PROSITE; PS00135; TRYPSIN HIS; 1.
                                                                               InterPro; IPRO00001; Kringle.
Pfam; PF00051; kringle; 31.
PRINTS; PR00013; KRINGLE.
ProDom; PD000395; Kringle; 31.
SMART; SM00130; KR; 31.
PROSITE; PS00021; KRINGLE 1; 30.
PROSITE; PS50070; KRINGLE 2; 31.
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Q28398;
Q1-NOV-1996;
Q1-NOV-1996;
Q1-MAR-2003;
                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=96025778; PubMed=7592597;
Lawn R.M., Boonmark N.W., Schwartz K., Lindahl G.E.,
Byrne C.D., Fong K.J., Meer K., Patthy L.;
"The recurring evolution of lipoprotein(a). Insights
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Erinaceus europaeus (Western European hedgehog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Insectivora; Erinaceidae; Erinaceinae; Erinac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01.NOV-1996 (TrEMBLrel 01, Created)
01.NOV-1996 (TrEMBLrel 01, Last sequence update)
01.NAR-2003 (TrEMBLrel 23, Last annotation update)
Apolipoprotein(a) (Fragment)
                          Glycoprotein; Kringle; Lipoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR003609; Pan app.
InterPro; IPR003966; ProThrombin.
InterPro; IPR001254; Ser protease_Try.
Pfam; PF00051; kringle; 5.
                                                                                                                                                                                                                                                                                    EMBL; U33170; AAC48522.1;
HSSP; P00747; 1PMK.
                                                                                                                                                                                                                                                                                                                                         hedgehog apolipoprotein(a).";
J. Biol. Chem. 270:24004-24009(1995)
-!- SIMILARITY: CONTAINS 31 KRINGLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=9365;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          364 QSPVIQECYEGKGENYRGTTSTTISGKKCQAWSSMTPHQHKKTPDNFPNADLIRNYCRNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P00747;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 KSPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DGDKSPWCYTMDPTVRWEFCNLEKCSGTGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DSGKQPWCYTTDPCVRWEYCNLTQCSETES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IPR001314; Chymotrypsin.
IPR000001; Kringle.
IPR003014; PAN.
IPR003609; Pan_app.
     2869
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
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     318601 NW;
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Pred. No. 1.9e-32;
5; Mismatches 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
     9527CEF985A4FB2A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2869
                                                                                                                                                                                                                                                                                                                                              DOMAINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    453
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Best Local S
Matches 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 45
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Q8AVB0;
01-MAR-2003
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-MAR-2003 (TrEMBLrel. 23, Created)
01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
Muscle-specific receptor tyrosine kinase MuSK.
Gallus gallus (Chicken).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-MAR-2003 (TrEMBLrel. 23, Created)
01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
101-MAR-2003 (TrEMBLrel. 23, Created)
101-MAR-2003 (TrEMBLrel. 23, Created)
101-MAR-2003 (TrEMBLrel. 23, Last sequence update)
101-MAR-2003 (TEMBLrel. 23, Last sequence update)
1
                                                                                                                                SEQUENCE FROM N.A.

MEDLINE=20538710; PubMed=11083926;

IP F.C., Glass D.G., Gies D.R., Cheung J., Lai K.

Yancopoulos G.D., IP N.Y.;

"Cloning and characterization of muscle-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NON TER
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Hanumanthaiah R., Day K., Jagadeeswaran P.;

"Comprehensive analysis of blood coagulation pathways in Evolution of coagulation factor genes and identification factor VIII.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Archosauria; Aves; Neognathae; Galliformes; Phasianidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Blood Cells Mol. Dis. 0:0-0(2002).
EMBL; AF515276; AAN71006.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=7955;
    SEQUENCE FROM N.A.
                                                                                     "Cloning and Mol. Cell. No
                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 DSG-KOPWCYTTDPCVRWEYCNLTQCSETESG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 47;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNPDSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DSDVNGPWCYTTDPSKKWDYCQIPDCESLKCG
                                                                                               Neurosci.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 429 AA; 47556 MW; 9A580A214A549C12 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chordata; Craniata; Vertebrata; Euteleostomi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            50.5%;
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51.7%;
                                                                                                   16:661-673 (2000)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 272; DB 13;
Pred. No. 3.1e-22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 281; DB 6;
Pred. No. 2.4e-22;
8; Mismatches 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
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                                                                                                                                                                                                                                    Lai K.O.,
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Result
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        January 12, 2004, 17:16:07 ; Search time 36.2632 Seconds (without alignments)
398.314 Million cell updates/sec
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AAY02103
AAY08687
AAY70255
AAY02106
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AAY72944
AAG67228
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                Human angiostatin
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18	12	12	12	12	12	11	13	24	23	22	21	21	21	18	22	15	23	23	20	23	24	13	13	23	20	21	20	20	23	21	17	21	21	21
AAW31169	AAR14938	AAR13221	AAR13220	AAR12406	AAR13219	AAR08065	AAR20013	ABG76087	AAE23660	AAG67223	AAY50867	AAY99589	AAB01887	AAW34285	AAB36562	AAR60519	ABB75943	ABB75944	AAY02100	ABB75942	AAG79749	AAR22503	AAR22499	ABB75941	AAW95051	AAY79224	AAY02101	AAY02105	AAM48894	AAB16450	AAW07579	AAY79225 ·	22	AAY53868
Plasminogen protei	Sequence encoded b	Human plasminogen	human		human	Human plasminogen	PA mutant Plg 1-54	Human plasminogen				Human plasminogen.	Human plasminogen,	Human plasminogen.	Mammalian kringle	Human 'Glu' plasmi	Angiotensin-tumour	Angiotensin-tumour	A multifunctional	Endothelial cell g	Human plasminogen	[GARSYQ] - [Plasmino	[GARSYQ] - [Plasmino	Human plasminogen	Amino acid sequenc	Angiogenesis inhib	A multifunctional	A multifunctional	Human angiostatin	Human angiostatin	Human kringle 1-48		Angiogenesis inhib	O

## ALIGNMENTS

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RESULT 1
AAY72945
ID AAY7
XX AAY727
XX AAY7
XX AAY7
XX Huma
XX Huma
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Human; angiogenesis inhibitor; LK6; apolipoprotein(a) kringle domain; angiogenesis-mediated disease; cancer; rheumatoid arthritis; therapy; cytostatic; antirheumatic; antiarthritic; antipsoriatic; psoriasis; ocular angiogenic disease; endothelial cell proliferation; tumour; cell migration.

Homo sapiens.

WO200119868-A1

22-MAR-2001.

15-SEP-1999; 99WO-KR00554

15-SEP-1999; 99WO-KR00554

MOGAM BIOTECHNOLOGY RES INST.

WPI; 2001-244787/25. Chang J, Kim JS, Park EJ, Yum J, Chung S

N-PSDB; AAD03256.

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RRESULT 2
AAX772944
ID AAX77294
AAX77294
AAX77294
AC AAY7
AX AAY7
AX AAY7
AX Huma
CH Huma
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel angiogenesis inhibitor, LK68 for treating angiogenesis-mediated diseases, e.g. cancer and rheumatoid arthritis, has human apolipoprotein(a) kringle domains IV36, IV37 and V38 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human; angiogenesis inhibitor; LK68; apolipoprotein(a) kringle domain; angiogenesis-mediated disease; cancer; rheumatoid arthritis; therapy; cytostatic; antirheumatic; antisrthritic; antipsoriatic; psoriasis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY72944 standard;
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                                                                                                                                                                                                                                                                                                                       Domain
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       15-SEP-1999;
                                                                         22-MAR-2001.
                                                                                                                                           WO200119868-A1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
       99WO-KR00554.
                                                                                                                                                                                                                /note= "Apolipoprotein(a) kringle domain V38,
protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /label= KIV36
/note= "Apolipoprotein(a) kringle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                     /label= KIV37
/note= "Apolipoprotein(a) kringle
                                                                                                                                                                                                                                                                                      label- KV38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       disease; endothelial cell proliferation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
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Pred. NO. 1.5e-42;
; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  91
                                                                                                                                                                                                                                                                                                                                                                                             domain IV37,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present sequence is human angiogenesis inhibitor, LK68 protein.

LK68 protein contains the amino acid sequences of human apolipoprotein(a) kringle domains IV36 (LK6 protein). IV37 (LK7 protein) and V38 (LK8 protein). LK68, LK6, LK7 and LK8 are inhibitors are of endothelial cell proliferation, cell migration and normal development of capillaries in the chick embryo chorioallantoic membrane (CAM). LK68 protein, its single kringles or their functional equivalents, are useful for treating angiogenesis-mediated diseases, such as cancer, rheumatoid arthritis, psoriasis or ocular angiogenic disease in animals or humans.

LK68 is useful as an anticancer agent and also for inhibiting primary
                                                                                                                                                                                       Angiostatin; plasminogen; sulfydryl donor; angiogenesis; tumour; angiogenic disease; neoplastic disease; connective tissue disorder; rheumatoid arthritis; atherosclerosis; ocular angiogenic disease; diabetic retinopathy; corneal graft rejection; cardiovascular disease; cerebral vascular disease; diabetes; immune disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 4; Page 42-44; 50pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Novel angiogenesis inhibitor, LK68 for treating angiogenesis-mediated diseases, e.g. cancer and rheumatoid arthritis, has human apolipoprotein(a) kringle domains IV36, IV37 and V38 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-SEP-1999;
                                                                                                                                                   Macaca mulatta.
                                                                                                                                                                                                                                                                                                     13-NOV-2001
                                                                                                                                                                                                                                                                                                                                                          AAG67228 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tumour growth.
                                                                                                                                                                             chronic inflammation; autoimmunity.
                                                                                                                                                                                                                                                                            Amino acid sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      DSGKQPWCYTTDPCVRWEYCNLTQCSETESG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KSPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNP
                                                                                                                                                                                                                                                                                                                                                                                                                           DSGKOPWCYTTDPCVRWEYCNLTOCSETESG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kim JS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          308 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                     (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BIOTECHNOLOGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99WO-KR00554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Park EJ,
                                                                                                                                                                                                                                                                                                                                                          Protein;
                                                                                                                                                                                                                                                                                                     entry)
                                                                                                                                                                                                                                                                           of monkey plasminogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 539; DB 22;
Pred. No. 4.8e-42;
; Mismatches 0;
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    donor, or culturing cells capable of producing plasminogen activator in conditioned culture medium (CCM) and contacting the CCM with plasminogen. Angiostatin produced by method of the invention is useful for treating animals with angiogenesis diseases. It is useful for treating an angiogenic disease such as neoplastic diseases (e.g. tumours and tumour metastasis), benign tumours (e.g. hemangiomas, acoustic neuromas, etc), connective tissue disorders (e.g. rheumatoid arthritis and atherosclerosis), ocular angiogenic diseases (e.g. diabette retinopathy, corneal graft rejection, etc), cardiovascular diseases, cerebral vascular diseases, diabettes associated diseases and immune disorders (e.g. chronic inflammation and autoimmunity). The present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         interferon-inducible protein; platelet factor 4; anti-angiogenic; anti-tumor; multifunctional protein; angiogenic-mediated disease; cancer; diabetic retinopathy; macular degeneration; arthritis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Producing angiostatin for treating angiogenic diseases involves contacting plasminogen with plasminogen activator and sulfhydryl donor simultaneously, or producing plasmin which is contacted with sulfhydryl
                              Bolanowski MA, Cap
Klein BK, McKearn
                                                                                                                                                                               01-OCT-1997;
                                                                                                                                                                                                                                                                                               08-APR-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                             Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A multifunctional protein of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAY02108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sequence represents a plasminogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Page 90-93; 101pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Soff G,
                                                                                                                                                                                                                                30-SEP-1998;
                                                                                                                                                                                                                                                                                                                                                      WO9916889-A1
                                                                                                                                                                                                                                                                                                                                                                                                               Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Angiostatin; endostatin; interferon; thrombospondin;
                                                                                                                   (SEAR ) SEARLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   specification
                                                                                                                                                                                                                                                                                                                                                                                                            sapiens.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cell production.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  scification describes a method for generating angiostatin in The method comprises contacting plasminogen with a sulfydryl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SGKQPWCYTTDPCVRWEYCNLTQCSETE 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNPD 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADKGPWCFTTDPSVRWEYCNLKKCSGTE 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TPVVQECYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHWHEKTPENFPNAGLTMNYCRNPD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                   & CO G D.
                                                                                                                                                                                                                                         98WO-US20464
                                                                                                                                                                               97US-0060609
                                 Caparon MH, arn JP;
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Pred. No. 4.3e-31;
LO; Mismatches 10;
                                                         Casperson GF,
                                                            Gregory SA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 810;
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              may exhibit useful properties such as having similar or greater biological activity when compared to a single factor or by having himproved half-life or decreased adverse side effects, or a combination of these properties. The proteins can be used for treating an angiogenic-mediated disease, e.g. cancer, diabetic retinopathy, macular degeneration, or arthritis. They can also be used for inhibiting the production of tumor cells (characteristic of lung, breast, ovarian, prostate, pancreatic, gastric, colon, renal, bladder cancers; melanoma, hepatoma, sarcoma and lymphoma) in a patient and for inhibiting tumor growth. The present sequence represents a multifunctional protein of the
                                                                                                           Bolanowski MA, Caparon
Klein BK, McKearn JP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Angiostatin; endostatin; interferon; thrombospondin; interferon-inducible protein; platelet factor 4; anti-angiogenic; anti-tumor; multifunctional protein; angiogenic-mediated disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A multifunctional protein of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                combinations of angiostatin, endostatin, interferon, thrombospondin, interferon-inducible protein and platelet factor 4, and have anti-angiogenic and/or anti-tumor activity. The multifunctional protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 5; Page 103-104; 121pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 1999-255098/21
                                                          WPI; 1999-255098/21
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                                                                                                                                                                                                                                                                                                                          30-SEP-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO9916889-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tumor cell production.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAY02103;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAY02103 standard; Protein; 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New multifunctional proteins useful for treating angiogenic-mediated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo
                                                                                                                                                                                                        (SEAR ) SEARLE & CO G D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                specification describes multifunctional proteins which comprise
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sapiens.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              252 ADKGPWCFTTDPSVRWEYCNLKKCSGTEA 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62 SGKQPWCYTTDPCVRWEYCNLTQCSETES 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            diabetic retinopathy; macular degeneration; arthritis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TPVVQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPD 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    280
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New multifunctional proteins useful for treating angiogenic-mediated

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RESULT 6
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             combinations of angiostatin, endostatin, interferon, thrombospondin, interferon-inducible protein and platelet factor 4, and have anti-angiogenic and/or anti-tumor activity. The multifunctional protein may exhibit useful properties such as having similar or greater biological activity when compared to a single factor or by having improved half-life or decreased adverse side effects, or a combination of these properties. The proteins can be used for treating an angiogenic-mediated disease, e.g. cancer, diabetic retinopathy, macular degeneration, or arthritis. They can also be used for inhibiting the production of tumor cells (characteristic of lung, breast, overlan, prostate, pancreatic, gastric, colon, renal, bladder cancers, melanoma, hepatoma, sarcoma and lymphoma) in a patient and for inhibiting tumor growth. The present sequence represents a multifunctional protein of the
                                                                                                                                                                                                                                                                                                                                           Plasminogen; human; angiostatin; endostatin; gene therapy; vector; anti-angiogenic; attenuation; cytostatic; anti-diabetic; ophthalmology; tumour growth; solid tumour; diabetic retinopathy; retina.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 5; Page 99-100; 121pp; English
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                                                                                             WPI; 1999-357696/30
N-PSDB; AAX77713.
                                                                                                                                                                                                                                                                                                                                                                                                   Human angiostatin protein fragment.
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                                      Disclosure; Page 59-60; 83pp; English
                                                               Anti-angiogenic
                                                                                                                                     Bachelot T,
                                                                                                                                                                                                         20-NOV-1997;
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INST TECHNOLOGY.
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Pred. No. 2.4e-31;
8; Mismatches 11;
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This invention describes a novel viral gene therapy vector comprising nucleic acid molecule encoding an anti-angiogenic polypeptide chosen

The patent discloses a DNA molecule encoding a fusion protein comprising a signal sequence, an immunoglobulin Fc region, and an angiogenesis inhibitor selected from angiostatin, endostatin, a plasminogen fragment having angiostatin activity, a collagen XVIII fragment having endostatin activity, or combinations of them. The fusion protein (immunofusin) is

Novel fusion protein of angiostatin or endostatin and an immunoglobulin FC region, useful for treating conditions mediated by angiogenesis, such as rheumatoid arthritis, tumors and macular degeneration -

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Pages

45-46; 68pp; English.

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RRESULT 7
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Matches 70
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The specification describes multifunctional proteins which comprise combinations of angiostatin, endostatin, interferon, thrombospondin, interferon-inducible protein and platelet factor 4, and have
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                                                                                                                                                                                                                                             New multifunctional proteins useful
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Angiostatin; endostatin; interferon; thrombospondin;
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No. 3e-31;
                                                                                                                                                                                                                                                for treating angiogenic-mediated
                                                                                                                                                                                                                                                                                                                                                                                                                            GF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     90
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                                                                                                                                                                                                                                                   Preparation of Kringle five peptide fragment for treating various disorders such as angiogenic, ocular, skin diseases and cancer, involves mixing mammalian plasminogen and elastase followed by incubation and isolation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                03-MAY-1996;
03-APR-1997;
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antipsoriatic; antiinflammatory; antiulcer; antirheumatic; antiarthritic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Plasminogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human plasminogen kringles 1-4 (angiostatin).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-SEP-2000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  anti-angiogenic and/or anti-tumor activity. The multifunctional protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (ABBO ) ABBOTT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LAB.
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97US-0832087.
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78.7%;
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Pred. No. 3e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 autoimmune disease.
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The invention relates to a method of preparing plasminogen kringle 5 peptide fragments. The method comprises mixing mammalian plasminogen and elastase in the ratio 1:100-1:300, followed by incubating and isolating the fragment. The kringle 5 peptides are inhibitors of angiogenesis and endothelial cell proliferation and migration. The peptides are useful for treating angiogenic diseases, primary and metastatic solid tumours

Example

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English.

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CC Note: This sequence is not shown in the specification, but is derived CC from the full length human plasminogen sequence (AAB01887) shown in
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Best Local S
Matches 70
                                                                                                                                                                              Purifying angiogenesis inhibitors produced as recombinant proteins in Escherichia coll, useful as anticancer agents and for treating ocular diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human, plasminogen; angiostatin; greenstatin; thrombolytic factor; angiogenesis inhibitory protein; proliferation; angiogenesis; cancer; vascular endothelial cell; ophthalmic disease; glaucoma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13-MAR-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAY53868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAY53868 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-MAY-1998;
27-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   02-DEC-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      diabetic retinopathy; arthritis; psoriasis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Amino acid sequence of human angiostatin protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tigure
                                                                                                       Claim 2; Page 45-47; 55pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO9961464-A1
                                                                                                                                                                                                                                                                                                                 WPI; 2000-086703/07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (GREC ) KOREA GREEN CROSS CORP.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62 SGKQPWCYTTDPCVRWEYCNLTQCSETES 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  70;
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                                                                                                                                                                                                                                                                                                                                                                                 So SH, F
Chang S;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        adkgpwcfttdpsvrweyCNLkkCsgtea 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TPVVQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPD 332
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
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99KR-0019144.
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78.7%;
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28
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Pred. No. 3e-31;
8; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                        Jung
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                                                                                                                                                                                                                                                                                                                                                                                                                            Kim
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                                                                                                                                                                                                                                                                                                                                                                                                                            Lee
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The present sequence represents the human angiostatin protein. It is derived from the plasminogen protien, and comprises amino acids

Claim 1; Fig 10; 72pp; English.

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RESULT 11
AAY79226
ID AAY79
XX AAY79
XX 19-JU
XX Angio
XX Angio
XX Angio
XX Angio
XX Homo
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XX Homo
XX Homo
XX 1-euka
XX 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CC amino acids 101-354. Angiostatin and greenstatin are used as thrombolytic factors and angiogenesis inhibitory proteins. Angiostatin contains the kringle 1-4 region of plasminogen, and greenstatin contains the kringle 1-4 region of plasminogen, and greenstatin contains contains the kringle 1-4 region of plasminogen, and greenstatin contains contains the kringle 1-3 region of plasminogen. As both proteins contain a high contains of disulphide bonds, they are difficult to purify. The contain a high contains a protein of such greenstation describes a method for the purification of such and contains, produced as inclusion boddes in Escherichia coli and contains, produced as inclusion boddes in Escherichia coli and containing the solubilised fraction in buffer containing urea and containing. The angiogenesis inhibitory proteins specifically inhibit contains are used to suppress angiogenesis, specifically for treating concers (e.g. of lung, skin and brain) or ophthalmic diseases (e.g. glaucoma and diabetic retinopathy), but also arthritis and psoriasis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 70
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            snake venom; cobra; antimetastatic; cytostatic; antitumour
prostate cancer; breast cancer; colon cancer; lung cancer;
leukaemia; metastasis; contraceptive; therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY79226;
                                                                                New angiogenesis inhibitors useful for treating solid leukemias, tumor metastasis, benign tumor, rheumatoid psoriasis and ocular angiogenic diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19-JUN-2000
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                                                                                                                                                                                                                                                                                                                                                                              20-AUG-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Angiogenesis inhibitor; plasminogen; human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Angiogenesis inhibitor obtained by plasminogen cleavage.
                                                                                                                                                                                                                                                                                                                     (UYVE-) UNIV VERMONT & STATE AGRIC COLLEGE.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sapiens.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TPVVQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADKGPWCFTTDPSVRWEYCNLKKCSGTEA 361
                                                                                                                                                                                                                                                          Jenny NS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              369 AA;
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                                                                                                                                                                                                                                                                                                                                                                              98US-0097244.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note- "N-glycosylated"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              78.5%;
78.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          374
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Pred. No. 3e-31;
8; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11;
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                                                                                                                          tumors,
arthritis
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RESULT 12
AAY79225
ID AAY79
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present sequence represents a preferred angiogenesis inhibitor of the invention that is obtained by cleavage of human plasminogen with spitting cobra (Naja nigricollis nigricollis) venom K4 protease and plasmin. The K4 protease cleaves native plasminogen to following amino acid residue 452, with little or no disruption of the first 4 plasminogen kringles. Plasmin cleaves between residues 77 and 78 of human plasminogen. Thus, the present protein spans amino acid residues 78-451 of plasminogen. The angiogenesis inhibitors obtained from plasminogen can be used to inhibit tumour growth in a mammal, preferably human. They are useful for treating angiogenesis—associated diseases such as: solid tumours, prostate cancer, breast cancer, colon cancer and lung cancer (claimed); blood-borne tumors such as leukaemia; metastasis, benign tumours;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                               Angiogenesis inhibitor; plasminogen; human; K4 protease; snake venom; cobra; antimetastatic; cytostatic; antitumo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rheumatoid arthritis; psoriasis; ocular angiogenic diseases; myocardial angiogenesis; plaque neovascularization; telanglectasia; haemophiliac joints; angiofibroma; wound granulation; excessive or abnormal stimulation of endothelial cells; and as birth control agents by preventing vascularization required for embryo implantation. The inhibitors are administered also to extend the dormancy of micrometastases and to stabilize any residual primary
                                                                                                                                                                                                                                                                                Key
Modified-site
                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                               prostate cancer; breast cancer; colon cancer; lung cancer;
leukaemia; metastasis; contraceptive; therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAY79225;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAY79225 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
New angiogenesis inhibitors useful for treating solid tumors,
                               WPI; 2000-246485/21
                                                               Mann KG,
                                                                                                                                 20-AUG-1998;
                                                                                                                                                                19-AUG-1999;
                                                                                                                                                                                                                                WO200010506-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Angiogenesis inhibitor obtained by plasminogen cleavage.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19-JUN-2000
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                                                                                                (UYVE-) UNIV VERMONT & STATE AGRIC COLLEGE
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nes 70; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    334 ADKGPWCFTTDPSVRWEYCNLKKCSGTEA 362
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TPVVQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPD
                                                               Jenny NS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       374 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                               98US-0097244
                                                                                                                                                                99WO-US18877
                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                               /note- "N-glycosylated"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Protein;
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78.7%;
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Pred. No. 3.1e-31;
8; Mismatches 11;
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                                                                                                                                                                                                                                                                                                                                                                                                  antitumour; tumour;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 374;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present sequence represents a preferred angiogenesis inhibitor of the invention that is obtained by cleavage of human plasminogen (CC with spitting cobra (Naja nigricollis nigricollis) venome (A) with spitting cobra (Naja nigricollis nigricollis) venome (A) corrected and plasmin. The K4 protease cleaves native plasminogen (CC protease and plasminogen kringles. Plasmin cleaves between residues (CC the first 4 plasminogen kringles. Plasmin cleaves between residues (CC the first 4 plasminogen kringles. Plasminogen. The angiogenesis spans (CC the first 4 plasminogen. Thus, the present protein spans (CC thibitors obtained from plasminogen can be used to inhibit tumour (CC tribibitors obtained from plasminogen can be useful for treating candidations obtained from plasminogen can be useful for treating (CC tribibitors such as leukasmia; metastasis; benign tumours; prostate (CC clamer, breast cancer, colon cancer and lung cancer (claimed); (CC tribibitors such as leukasmia; metastasis; benign tumours; prostate (CC tribibitors) pooriasis; ocular angiogenic diseases; (CC the manatoid arthritis; psoriasis; ocular angiogenic diseases; (CC the mour of endothelial cells; and as birth control (CC agents by preventing vascularization required for embryo (complantation. The inhibitors are administered also to extend the common of micrometastases and to stabilize any residual primary (complantation) of micrometastases and to stabilize any residual primary (complantation) of micrometastases and to stabilize any residual primary (complantation) of micrometastases and to stabilize any residual primary (complantation) of micrometastases and to stabilize any residual primary (complantation) of micrometastases and to stabilize any residual primary (complantation) of micrometastases and to stabilize any residual primary (complantation) of micrometastases and to stabilize any residual primary (complantation) of micrometastases (collantation) of high primary (collantation) of micrometastases (collantation) of high primary (collantati
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26-APR-1995;
22-FEB-1996;
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                      WPI; 1996-518662/51
                                                              Cao Y,
                                                                                                                                                                                                                                     26-APR-1996;
                                                                                                                                                                                                                                                                                                                            WO9635774-A2
                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                             angiostatin; plasmino;
macular degeneration;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human kringle 1-4BKLS.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAW07579 standard; protein; 378
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62 SGKOPWCYTTDPCVRWEYCNLTOCSETES 90
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                                                              Folkman MJ,
                                                                                                         CHILDRENS MEDICAL CENT
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                                                                                                                                                                                                                                                                                                                                                                                                             plasminogen; kringle; angiogenesis; cancer; arthritis;
neration; diabetic retinopathy.
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95US-0429743.
96US-0605598.
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                                                              Lin J, Oreilly MS,
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78.7%;
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Pred. No. 3.1e-31;
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New angiogenesis-inhibiting protein receptors, useful in methods for treating diseases and processes that are mediated by angiogenesis, such as solid tumours, psoriasis, scleroderma and myocardial angiogenesis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Angiogenesis-inhibiting protein receptor; angiogenesis; angiostatin; endostatin; plasminogen; laminin; treatment, wound healing; solid tumour; psoriasis; scleroderma, yoccardial angiogenesis; Crohn's disease; cerebral collateral; arteriovenous malformation; rubeosis; cancer; diabetic retinopathy; arthritis; wound healing; peptic ulcer; Helicobacter related disease; fracture; cat scratch fever.
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                                                                                                                                                                                                                                              MacDonald NJ,
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                                                                                                                                                                                                                                                                                                                            (ENTR-) ENTREMED INC.
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78.7%;
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3.1e-31;
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the DNA sequences encoding them. Angiogenesis is the generation of new blood vessels into a tissue, and normally occurs in wound healing, foetal and embryonal development and the formation of the corpus luteum, endometrium and placenta. Angiostatin is a protein (see AAB16450 and AAA68202) involved in angiogenesis, and has an amino acid sequence similar to that of a plasminogen fragment (see murine plasminogen AAB16490). Angiostatin has the ability to inhibit angiogenesis. And AAB16490) and plasminogen fragment (see murine plasminogen AAA68203). Sequences AAA68242 and AAB16522 represent coding and protein sequences of human laminin. Laminin is an angiostatin binding protein, and some of the peptides of the invention share homology with regions of laminin. Peptides AB16452-B16521 (excluding AAB16490) are the
                                                           angiogenesis-inhibiting protein receptor fragments of the invention. The peptides bind either angiostatin or endostatin and can be used in methods for treating diseases and processes that are mediated by angiogenesis, such as solid tumours, psoriasis, seleroderma, myocardial angiogenesis, Crohn's disease, cerebral collaterals, arteriovenous malformations, rubeosis, diabetic retinopathy, arthritis, wound healing, peptic ulcers, Helicobacter related diseases, fractures, placentation and cat scratch fever. They are useful for the detection and prognosis of cancer. DNA sequences A628204-A628241 encode the peptides of the invention.
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; Figure 2; 100pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              invention relates to angiogenesis-inhibiting protein receptors,
                                                        A628204-A628241 encode the peptides
  378
  AA.
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Ş 밁 S 밁 Query Match Best Local S Matches 70 339 279 62 N Similarity ADKGPWCFTTDPSVRWEYCNLKKCSGTEA 367 SGKQPWCYTTDPCVRWEYCNLTQCSETES TOVVQDCYHGDGQSYRGTSSTTTTGKXCQSWSSMTPHRHQKTPENYPNAGLIMNYCRNPD SPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYFNAGLTENYCRNPD Conservative 78.5%; 8 Score 423; DB 21; Pred. No. 3.1e-31; 8; Mismatches 11. 90 11; Length 378; Indels , , Gaps 338 61 0

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AAM48894;
                                             AAM48894 standard; Protein; 378 AA
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04-APR-2002

(first entry)

ARMSULT 15
AAM48894
ID AAM48
XX AAM48
AC AAM48
A Human; angiostatin; endostatin; angiogenesis; cancer; metastasis; psoriasis; scleroderma; Crohn's disease; corneal disease; retinopathy; arthritis; wound healing; Helicobacter pylori; peptic gene therapy; angiostatin antagonist; endostatin antagonist; antiangiogenic; cytostatic; antiarrhritic; antiinflammatory; cerebroprotective; antidiabetic; virucide; antipyretic; vulnerary; Human angiostatin protein. 02-JUN-2000; 2000US-209065P. 08-MAY-2001; 2001US-289387P. 04-JUN-2001; 2001WO-US17947 13-DEC-2001 WO200193897-A2 gynaecological; cat scratch fever. (ENTR-) sapiens. ENTREMED INC.

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MacDonald NJ

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                                                                                                                                                                                                                                                                       The present invention relates to methods of regulating angiogenesis in an individual by administering an angiogenesis regulating composition comprising a tropomyosin binding compound or an actin disrupting compound. The compositions are useful for treating diseases and processes mediated by angiogenesis including haemangioma, solid tumours, blood bourne tumours, leukaemia, metastasis, Crohn's disease, coronary or cerebral collaterals, arthritis, diabetic neovascularisation, macular degeneration, wound healing, Helicobacter related diseases, ovulation, menstruation, and cat scratch fever. The present sequence is a protein described in the exemplification of the invention.
                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Regulating angiogenesis and treatment of angiogenesis-mediated diseases, e.g. hemangioma, tumors or cancer, by administering a tropomyosin binding compound or actin disrupting compound -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure; Fig 2; 95pp; English.
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279 TPVVQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPD 338
                                                                                                  378 AA;
                                                                                                                                                                                              Length 378;
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Search completed: January 12, 2004, 17:23:21 Job time: 37.2632 secs

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GenCore version 5.1.6 (c) 1993 - 2004 Compus

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Result
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Match
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1: /cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*

2: /cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB.pep:*

3: /cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB.pep:*

4: /cgn2_6/ptodata/1/pubpaa/US07_NEW_PUB.pep:*

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/cgn2_6/ptodata/1/pubpaa/US09NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10A_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10B_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10B_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10S_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10S_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10S_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10S_PUBCOMB.pep:*
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_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*
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US-10-29-418-11

US-09-973-676-1

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US-09-335-325-42

US-10-304-287-7

US-10-304-287-7

US-10-304-287-8

9 US-09-946-893-8

9 US-09-946-893-8

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             Sequence 126, App
Sequence 42, Appl
Sequence 42, Appl
Sequence 11, Appl
Sequence 11, Appl
Sequence 12, Appl
Sequence 42, Appl
Sequence 42, Appl
Sequence 7, Appli
Sequence 8, Appli
Sequence 4, Appli
Sequence 4, Appli
Sequence 8, Appli
Sequence 8, Appli
Sequence 8, Appli
Sequence 8, Appli
Sequence 6, Appli
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US-10-402-364-23	US-10-26/-13/-9	US-09-335-325-23	US-09-761-120-23	US-09-753-064-5	US-10-131-241-1	US-10-402-364-1	US-09-335-325-1	US-09-873-676-81	US-09-761-120-1	US-09-788-142-1	US-10-402-364-46	US-09-761-120-46	US-10-131-241-41	US-10-402-364-41	-09-335-325	US-09-761-120-41	US-10-292-418-25	US-10-292-418-40	-10-157-369-	US-10-157-369-4	US-10-131-241-40	US-10-402-364-40	US-09-335-325-40	US-09-761-120-40	US-10-193-656-2	US-10-237-144-1	US-09-946-893-2	US-10-304-287-1
Sequence 23, Appl	ي ر د د	23	Sequence 23, Appl	Sequence 5, Appli	_	٠,	e 1,	81,	1,	Sequence 1, Appli	e 4	6	4	4	e 41	41,	25,	40	ν,	Sequence 4, Appli	40,	40,	e 40,	40,	ν,	e 1,	Sequence 2, Appli	Sequence 1, Appli

## ALIGNMENTS

US-09-870-759-126

GENERAL INFORMATION:

FOR TREATMENT OF NEOPLASTIC DISEASE

Sequence 126, Application US/09870759 Patent No. US20020177551A1

RESULT 2
US-09-751-708A-126
; Sequence 126, Application US/09751708A
; Publication No. US20030157113A1
; GENERAL INFORMATION: 밁 S Ś ; TYPE: PRT ; ORGANISM: Homo sapiens US-09-870-759-126 PRIOR APPLICATION NUMBER: US 60/208,128
PRIOR FILING DATE: 2000-05-30
NUMBER OF SEQ ID NOS: 166
SOFTWARE: PatentIn version 3.1
SEQ ID NO 126
LENGTH: 1169 Query Match Best Local & Matches APPLICANT: TERMAN, DAVID S
TITLE OF INVENTION: COMPOSITIONS AND METHODS
FILE REFERENCE: 870759
CURRENT APPLICATION NUMBER: US/09/870,759
CURRENT FILING DATE: 2002-01-14 684 DSGKOPWCYTTDPCVRWEYCNLTQCSETESG 714 624 KSPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNP 683 61: DSGKQPWCYTTDPCVRWBYCNLTQCSETESG 91 μ ch 100.0%; Score 539; DB 10; Similarity 100.0%; Pred. No. 1.1e-49; 91; Conservative 0; Mismatches 0; KSPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNP Indels Length 1169; 0 Gaps 60

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GENERAL INFORMATION:
APPLICANT: FOlkman, M. Judah
APPLICANT: FOR APPLICANT: O'Reilly, Michael
TITLE OF INVENTION: Nucleic Acids Encoding Kr:
FILE REFERENCE: 05940-0151 (43171-252068)
CURRENT APPLICATION NUMBER: US/09/761,120
CURRENT FILING DATE: 2001-01-16
PRIOR APPLICATION NUMBER: 09/309,821
PRIOR FILING DATE: 1999-05-11
PRIOR APPLICATION NUMBER: 08/866,735
PRIOR FILING DATE: 1997-05-30
NUMBER OF SEQ ID NOS: 47
SOPTWARE: Patentin version 3.0
SEQ ID NO 42
LENGTH: 368
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CURRENT FILING DATE: 2002-10-15
PRIOR APPLICATION NUMBER: US 60/173,371
PRIOR FILING DATE: 1999-12-28
NUMBER OF SEQ ID NOS: 166
SOFTWARE: Patentin version 3.1
SEQ ID NO 126
LENGTH: 1169
TYPE: PRT
ORGANISM: Homo sapiens
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US-09-761-120-42
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                                                                               US-10-402-364-42
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Sequence 42, Application US/10402364
Publication No. US20040002459A1
GENERAL INFORMATION:
APPLICANT: O'Reilly, Michael
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TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATMENT OF NEOPLASTIC DISEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILE REFERENCE: 751708
                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
NAME/KEY: misc_feature
OTHER INFORMATION: Kringle 1-4 BKLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Homo sapiens
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                                                                                                                                                              329 ADKGPWCFTTDPSVRWEYCNLKKCSETEA 357
                                                                                                                                                                                                                                             269 TPVVQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMYYCRNPD
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                                                                                                                                                                                                                                                                                  2 SPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNPD
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Similarity 79.8%;
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                                                                                                                                                                                                                                                                                                                                            Score 430; DB 9
Pred. No. 2e-38;
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                                                                                                                                                                                                                                                                                                                                                                 DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kringle 1-5 Region Fragments of Plasminog
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                                                                                                                                                                                                                                                                                                                                                               Length 368
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; ORGANISM: Homo sapiens
; FEATURE;
; NAME/KEY: misc_feature
; OTHER INFORWATION: Kringle 1-4 BKLS
US-10-402-364-42
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                                                                                                                                                                                                                                                       US-10-292-418-11
                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: Expression and Export of Angiogenesis Inhibitors as TITLE OF INVENTION: Immunofusins FILE REFERENCE: LEX-006C1 CURRENT APPLICATION NUMBER: US/10/292,418 CURRENT FILING DATE: 2002-11-12 PRIOR APPLICATION NUMBER: 09/83,315 PRIOR APPLICATION NUMBER: 09/83,315 PRIOR FILING DATE: 1999-08-25 PRIOR APPLICATION NUMBER: US 60/097,883 PRIOR APPLICATION NUMBER: US 60/097,883 PRIOR FILING DATE: 1998-08-25 PRIOR FILING DATE: 1998-08-25 PRIOR APPLICATION NUMBER: US 60/097,883 PRIOR FILING DATE: 1998-08-25 NUMBER OF SEQ ID NOS: 54 SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 71
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LENGTH: 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
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                                                                                                                                                                     Matches
                                                                                                                                                                                                             Query Match
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TITLE OF INVENTION: Nucleic Acids Encoding Kringle 1-5 Region Fragments of Plasminoger
FILE REFERENCE: 05213-2151 (43170-252068)
CURRENT APPLICATION NUMBER: US/10/402,364
CURRENT FILING DATE: 2003-03-28
PRIOR APPLICATION NUMBER: US/99/761,120A
PRIOR FILING DATE: 2001-01-16
PRIOR FILING DATE: 2003-03-821
PRIOR APPLICATION NUMBER: 09/309,821
PRIOR FILING DATE: 1999-05-11
PRIOR APPLICATION NUMBER: 08/866,735
PRIOR FILING DATE: 1999-05-30
NUMBER OF SEQ ID NOS: 52
SOPTWARE: FREE IN Version 3.1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Lo, Kin-Ming
                                                                                                                                                                                                                                                                                                    LENGTH:
TYPE: PR
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                                                                                  275 TPVVQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPD
335 ADKGPWCFTTDPSVRWEYCNLKKCSGTEA 363
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                                   62 SGKOPWCYTTDPCVRWEYCNLTQCSETES 90
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                                                                                                                        2 SPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNPD
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78.7%;
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Pred. No. 2e-38;
                                                                                                                                                                                      Score 423; DB 12;
Pred. No. 1.1e-37;
                                                                                                                                                                       Mismatches
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Patent No. US20020077289A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 42, Application Patent No. US200201647 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOPTWARE: PatentIn version 3.1
SEQ ID NO 1
LENGTH: 378
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ORGANISM: Homo sapiens
-09-873-676-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: MacDonald, Nicholas J.
APPLICANT: MacDonald, Nicholas J.
APPLICANT: Sim, Kim L.
TITLE OF INVENTION: Angiostatin and Endostatin Binding Proteins and Methods of Use
FILE REFERENCE: 05213-0378 (43170-259333)
CURRENT APPLICATION NUMBER: US/09/873,676
CURRENT FILING DATE: 2001-06-04
PRIOR APPLICATION NUMBER: US 60/209,065
PRIOR FILING DATE: 2000-06-02
PRIOR FILING DATE: 2000-05-08
PRIOR APPLICATION NUMBER: US 60/289,387
PRIOR APPLICATION NUMBER: US 60/289,387
PRIOR FILING DATE: 2001-05-08
NUMBER OF SEQ ID NOS: 123
                                                                                                                                                                                                                           COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATION GRATA:
SOUTH REPLICATION DATA:
APPLICATION NUMBER: US/09/335,325
PILING DATE: 17-Jun-1999
CLASSIFICATION: VUNKNOWN>
PRIOR APPLICATION DATA:
OPERATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
ATTORNEY/AGENT INFORMATION:
NAME: Warren, William L.
REGISTRATION NUMBER: 36,714
REFERENCE/DOCKET NUMBER: 05213-0126
TELECOMMUNICATION INFORMATION:
TELEPHONE: 404-818-3700
TELEFAX: 404-818-3799
                                                                                                                                                                                                                                                                                                                                                                                                                              ZIP: 30303-1769
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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ADDRESSEE: Jones & Askew
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TITLE OF INVENTION: Angiostatin Fragments and Method of Use
NUMBER OF SEQUENCES: 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Folkman, M. Judah
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                                                                                                                                                                              APPLICATION NUMBER: US/08/612,788 FILING DATE: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: Atlanta
STATE: Georgia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET: 191 Peachtree Street, 37th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/09335325
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78.7%;
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US-10-131-241-42
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SEQ ID NO 42
LENGTH: 378
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Best Local Similarity
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Best Local Similarity 78.7%;
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APPLICANT: Fortier, Anne H.
TITLE OF INVENTION: Compositions and Methods for Inhibiting Endothelial Cell Prolifere
TITLE OF INVENTION: Compositions and Methods for Inhibiting Endothelial Cell Prolifere
TITLE OF INVENTION: and Regulating Angiogenesis Using Cancer Markers
FILE REFERENCE: 05213-0344 43170-271565
CURRENT APPLICATION NUMBER: US/10/131,241
CURRENT FILING DATE: 2002-07-22
                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: US 09/413,049
PRIOR FILING DATE: 1999-10-06
PRIOR APPLICATION NUMBER: US 09/316,802
PRIOR FILING DATE: 1999-05-21
PRIOR APPLICATION NUMBER: US 60/086,586
PRIOR FILING DATE: 1998-05-22
NUMBER OF SEQ ID NOS: 65
                                                                                                                                                                                                                                                                                                     TYPE: PRT
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SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLONE: K1-4BKLS
SEQUENCE DESCRIPTION: SEQ ID NO: 42:
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                                                                                 279 TPVVQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPD 338
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                      62 SGKOPWCYTTDPCVRWEYCNLTQCSETES 90
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ADKGPWCFTTDPSVRWEYCNLKKCSGTEA 367
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                                                                                                                                                                                           78.5%;
78.7%;
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                                                                                                                                                                                        Score 423; DB 15;
Pred. No. 1.2e-37;
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Pred. No: 1.2e-37;
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RESULT 9 US-10-304-287-7

; Sequence 7, Application US/10304287; Publication No. US20030083234A1

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SOPTWARE: Microsoft Word
SEQ ID NO 8
LENGTH: 394
TYPE: PRT
ORGANISM: mammalian
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Sequence 4, Application US/09946893
Patent No. US20020072494A1
GENERAL INFORMATION:
APPLICANT: Cao, Yihai
APPLICANT: Cao, Yihai
TITLE OF INVENTION: Materials and methods relating to endothelial cell growth
TITLE OF INVENTION: inhibitors
FILE REFERENCE: Mewburn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 8, Application US/10304287
Publication No. US20030083234A1
GENERAL INFORMATION:
APPLICANT: Waisman, David M.
APPLICANT: Kwon, Mijung
TITLE OP INVENTION: Anti-angiogenesis methods, compositions and uses therefor PILE REFERENCE: ME02-001
CURRENT FILING DATE: US/10/304,287
CURRENT FILING DATE: 2002-11-26
PRIOR APPLICATION NUMBER: US 60/333,866
PRIOR PILING DATE: 2001-11-28
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Best Local
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CURRENT APPLICATION NUMBER: US/10/304,287
CURRENT FILING DATE: 2002-11-26
PRIOR APPLICATION NUMBER: US 60/333,866
PRIOR FILING DATE: 2001-11-28
NUMBER OF SEQ ID NOS: 8
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                                                                                                                                                                                                                                   335 ADKGPWCFTTDPSVRWEYCNLKKCSGTEA 363
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llarity 78.7%;
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78.7%;
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Pred. No. 1.3e-37;
8; Mismatches 11;
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Pred. No. 1.2e-37;
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RESULT 13 US-09-946-893-8

Sequence 8, Application US/09946893 Patent No. US20020072494A1

GENERAL INFORMATION:
APPLICANT: Cao, Yihad
TITLE OF INVENTION: Materials and methods relating to endothelial cell growth
TITLE OF INVENTION: inhibitors
FILE REFERENCE: Mewburn
CURRENT APPLICATION UMBER: US/09/946,893
CURRENT APPLICATION NUMBER: US 60/230,893

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RESULT 12
US-09-946-893-5
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; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-946-893-4
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Best Local S
Matches 70
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CURRENT FILING DATE: 2001-09-05
PRIOR APPLICATION NUMBER: US 60/230,893
PRIOR FILING DATE: 2000-09-05
NUMBER OF SEQ ID NOS: 11
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 4
                                                                                                                                                                                                                                                                 SEQ ID NO 5
LENGTH: 569
TYPE: PRT
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 5, Application US/09946893 Patent No. US20020072494A1 GENERAL INFORMATION:
                                                                                                                                           Matches
                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Cao, Yihai
TITLE OF INVENTION: Materials and methods relating to endothelial cell growth
TITLE OF INVENTION: inhibitors
FILE REFERENCE: Mewburn
CURRENT APPLICATION NUMBER: US/09/946,893
CURRENT FILING DATE: 2001-09-05
PRIOR APPLICATION NUMBER: US 60/230,893
PRIOR FILING DATE: 2000-09-05
NUMBER OF SEQ ID NOS: 11
                                                                                                                                                                                                                                                                                                                                        SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                                                                                                                  FEATURE:
                                                                    371 TPVVQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPD 430
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                                   62 SCKOPWCYTTDPCVRWEYCNLTQCSETES 90
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                                                                                                     2 SPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNPD 61
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 ADKGPWCFTTDPSVRWEYCNLKKCSGTEA 459
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Pred. No. 1.5e-37;
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pred. No. 1.9e-37;
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PRIOR FILING DATE: 2000-09-05
(NUMBER OF SEQ ID NOS: 11
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 8
LENGTH: 571
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
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US-09-946-893-6
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; OTHER INFORMATION: Description of Artificial Sequence: Angioquiescin
; OTHER INFORMATION: with a tumor targeting signal
US-09-946-893-6
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LENGTH: 576
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Cao, Yihai
TITLE OF INVENTION: Materials and methods relating to endothelial cell growth
TITLE OF INVENTION: inhibitors
FILE REFERENCE: Mewburn
                                                                                                                                                                                                                                                            Sequence 1, Application US/09967386
Patent No. US20020159992A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 78.5%;
Best Local Similarity 78.7%;
Matches 70; Conservative 8
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Patent No. US20020072494A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 78.5%;
Best Local Similarity 78.7%;
Matches 70; Conservative
APPLICANT: Abbott Laboratories
APPLICANT: Denkin, Jack
APPLICANT: Devin, Jonald J.
TITLE OF INVENTION: ANTIANGIOGENIC POLYPEPTIDES AND METHODS
TITLE OF INVENTION: FOR INHIBITING ANGIOGENESIS
FILE REFERENCE: 6738.US.02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQ ID NOS: 11
SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION NUMBER: US/09/946,893
CURRENT FILING DATE: 2001-09-05
PRIOR APPLICATION NUMBER: US 60/230,893
PRIOR FILING DATE: 2000-09-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OTHER INFORMATION: Description of Artificial Sequence: Angioquiescin OTHER INFORMATION: with a tumor targeting signal peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               431 ADKGPWCFTTDPSVRWEYCNLKKCSGTEA 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            371 TPVVQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPD 430
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62 SGKQPWCYTTDPCVRWEYCNLTQCSETES 90 : | | | | : | | | | | : | | | : | | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | : | | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : 
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Pred. No. 1.9e-37;
8; Mismatches 11
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CURRENT FILING DATE: 2001-09-26
PRIOR APPLICATION NUMBER: US 60/236,550
PRIOR FILING DATE: 2000-09-29
NUMBER OF SEQ ID NOS: 7
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 1
                                                                                                                     Matches
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Best Local (
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                                                         352 TPVVQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCKNPD 411
412 ADKGPWCFTTDPSVRWEYCNLKKCSGTEA 440
                 ch 78.5%; similarity 78.7%; 70; Conservative
                                                                                                                     8
                                                                                                                                   Score 423; DB 10;
Pred. No. 2.6e-37;
                                                                                                                   Mismatches
                                                                                                                                                 Length 791;
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Search completed: January 12, 2004, 17:29:39 Job time: 27.6842 secs

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Minimum DB
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Perfect score:
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Maximum Match 100%
Listing first 45 summaries
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   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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  length: 0
length: 2000000000
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Match
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1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*

2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep:*

3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep:*

4: /cgn2_6/ptodata/1/iaa/FCTUS_COMB.pep:*

5: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
  Copyright
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  GenCore version 5.1.6 (c) 1993 - 2004 Compugen Ltd.
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US-08-991-761A-11
US-09-377-250-3
US-09-377-250-3
US-09-366-028-42
US-09-366-028-42
US-09-335-325-42
US-09-335-325-42
US-09-377-250-1
US-09-377-250-4
US-08-469-486-54
US-08-469-658-54
US-08-813-995-1
US-09-131-995-1
US-09-132-154-1
US-09-132-154-6
US-08-467-0008-29
US-08-467-0008-29
US-08-91-761A-6
US-08-91-761A-7
US-08-610-28-40
US-09-066-028-40
US-09-066-028-40
US-09-066-028-40
US-09-335-325-40
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Sequence 11, Appli
Sequence 2, Appli
Sequence 42, Appli
Sequence 42, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 42, Appli
Sequence 4, Appli
Sequence 54, Appli
Sequence 54, Appli
Sequence 54, Appli
Sequence 1, Appli
Sequence 2, Appli
Sequence 1, Appli
Sequence 2, Appli
Sequence 1, Appli
Sequence 40, Appli
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Query Match 78.8%; Score 425; DB 4; Len Best Local Similarity 77.3%; Pred. No. 1.3e-37; Matches 68; Conservative 10; Mismatches 10; I	US-08-991-761A-11  US-08-991-761A-11  US-08-991-761A-11  Sequence 11, Application US/08991761A  Patent No. 6576609  GENERAL INFORMATION: APPLICANT: Soff, Gerald APPLICANT: Gately, Stephen APPLICANT: Twardowski, Przemyslaw TITLE OF INVENTION: "Methods and Compositions for NUMBER OF SEQUENCES: 16  CORRESPONDENCE ADDRESS: ADDRESSE: Sheridan Ross P.C. STREET: 1700 Lincoln St., Suite 3500 CITY: Denver STATE: COY COUNTRY: USA ZIP: 80203 COMPUTER READABLE FORM: MEDIUM TYPE: Ploppy disk COMPUTER READABLE FORM: MEDIUM TYPE: PLODS/MS-DOS SOFTWARE: PATENTIN Release #1.0, Version #1.30 CURRENT APPLICATION NUMBER: US/08/991,761A FILING DATE: CLASSIFICATION NUMBER: US/08/991,761A FILING DATE: CLASSIFICATION INFORMATION: NAME: CTOOK, Wannell M. REGISTRATION NUMBER: 3501-16-1 FELECOMMUNICATION INFORMATION: TELEPHONE: (303) 863-9700 TELEPHONE: (303) 863-9723 INFORMATION FOR SEQ ID NO: 11: SEQUENCE CHARACTERISTICS: LENGTH: 810 amino acids TYPE: amino acids TYPE: maino acids TYPE: maino acids TYPE: protein US-08-991-761A-11	ALIGNMENTS	28 405 75.1 84 4 US-09-348-953-2 29 402 74.6 790 4 US-08-991-761A-13 30 388 72.0 378 2 US-08-612-788-41 31 388 72.0 378 4 US-09-066-028-41 32 388 72.0 378 4 US-09-355-325-41 33 388 72.0 812 1 US-08-248-629A-1 35 388 72.0 812 1 US-08-248-629A-1 36 388 72.0 812 1 US-08-245-932-1 37 388 72.0 812 1 US-08-451-932-1 38 388 72.0 812 1 US-08-452-260-1 39 388 72.0 812 2 US-08-65-785-1 39 388 72.0 812 2 US-08-69-998-1 40 388 72.0 812 2 US-08-65-988-1 41 388 72.0 812 2 US-08-66-735-1 42 388 72.0 812 3 US-09-066-028-1 43 388 72.0 812 3 US-09-066-028-1 44 388 72.0 812 4 US-09-335-325-1 45 388 72.0 812 4 US-09-335-325-1
Length 810; Indels 0; Gaps 0;	Generating		Sequence 2, Appli Sequence 13, Appl Sequence 41, Appl Sequence 41, Appl Sequence 2, Appli Sequence 1, Appli

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62

431 ADKGPWCFTTDPSVRWEYCNLKKCSGTE 458

SGKQPWCYTTDPCVRWEYCNLTQCSETE

89

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GENERAL INFORMATION:

APPLICANT: MANN, KENNETH G.

APPLICANT: SWORDS JENNY, NANCY

APPLICANT: SWORDS JENNY, NANCY

TITLE OF INVENTION: ANGIOCENESIS INHIBITORS AND USERS THEREOF

FILE REFERENCE: 48409/360

CURRENT APPLICATION NUMBER: US/09/377,250

CURRENT APPLICATION NUMBER: US/09/377,250

CURRENT FILING DATE: 1999-08-19

NUMBER OF SEQ ID NOS: 5

SOPTWARE: Patentin Ver. 2.0

SEQ ID NO 3

SEQ ID NO SEQ
                                                                                                                                          FEATURE:
NAME/KEY: MOD RES
LOCATION: (265)
OTHER INFORMATION: Xaa = Gln or Glu
US-09-377-250-2
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; NAME/KEY: MOD_RES

; LOCATION: (264)

; OTHER INFORMATION: Xaa = Gln or Glu

US-09-377-250-3
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                                          Query Match
Best Local (
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Best Local Similarity
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Patent No. 6365364
        Matches
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CURRENT APPLICATION NUMBER: US/09/377,250
CURRENT FILING DATE: 1999-08-19
NUMBER OF SEQ ID NOS: 5
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APPLICANT: SWORDS JENNY, NANCY
TITLE OF INVENTION: ANGIOGENESIS INHIBITORS AND USERS THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 375
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURE: OTHER INFORMATION: angiogenesis inhibitor
                                                                                                                                                                                                                                                                                                                                                     FEATURE:
OTHER INFORMATION: angiogenesis inhibitor
/ Match 78.5%; Score 423; DB 4; Length 375; Local Similarity 78.7%; Pred. No. 8.8e-38; nes 70; Conservative 8; Mismatches 11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   334 ADKGPWCFTTDPSVRWEYCNLKKCSGTEA 362
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78.7%;
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Pred. No. 8.8e-38;
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RESULT 5

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Patent No.
                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: 05: TELECOMMUNICATION INFORMATION: TELEPHONE: 404-818-3700 TELEPHONE: 404-818-3700
                                                                                                                                                                                                                                                               HYPOTHETICAL: NO
ANTI-SENSE: NO
FRAGMENT TYPE: N-terminal
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Floppy disk
COMPUTER: FROM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/612,788
                                                                                                                                                                                                                                   IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: Angiostatin Fragments and Method of Use NUMBER OF SEQUENCES: 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Cao, Yihai
APPLICANT: Sim, B. Kim Lee
                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: Warren, William L. REGISTRATION NUMBER: 36,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: Atlanta
                                                                                                                                                                                                                                                      ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS:
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339 ADKGPWCFTTDPSVRWEYCNLKKCSGTEA 367
                                                                279 TPVVQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLIMNYCRNPD 338
                     62 SGKQPWCYTTDPCVRWEYCNLTQCSETES 90
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30303-1769
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O'Reilly, Micheal
                                                                                                                                   Conservative
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78.7%;
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                                                                                                                                 Score 423; DB 2;
Pred. No. 8.9e-38;
8; Mismatches 11
                                                                                                                                                                      Length 378;
                                                                                                                                     Indels
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US-09-066-028-42

tent No.

Sequence 42, Application US/09066028

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RESULT 6
US-09-206-059-1
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; CLONE: K1-4BKLS
US-09-066-028-42
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Matches
                                                              Sequence 1, Application US/09206059
Patent No. 6201104
GENERAL INFORMATION:
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MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/066,028
FILING DATE:
CLASSIFICATION DATA:
APPLICATION NUMBER: 08/612,788
APPLICATION NUMBER: 08/612,788
                                                                                                                                                                                                                                                                                                                                                                                  Query Match
APPLICANT: MacDonald, Nicholas
APPLICANT: Sim, Kim Lee
TITLE OF INVENTION: Angiogenesis-Inhibiting Protein Binding Peptides and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: 404-818-3799
INFORMATION FOR SEQ ID NO: 42:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
ATTORNEY/AGENT INFORMATION:
ATTORNEY WATTEN, William L.
NAME: WATTEN, William L.
REGISTRATION NUMBER: 36,714
REFERENCE/DOCKET NUMBER: 0521
TELECOMMUNICATION INFORMATION:
TELEPHONE: 404-818-3700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FRAGMENT TYPE: N-terminal ORIGINAL SOURCE: ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE:
HYPOTHETICAL: N
ANTI-SENSE: NO
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APPLICANT: Sim, B. Kim Lee
TITLE OF INVENTION: Angiostatin Fragments and Method of Use
                                                                                                                                                                                                                                                                                                                                            Local Similarity
nes 70; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: amino acid
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZIP: 30303-1769
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ENGTH:
                                                                                                                                                                                                339 ADKGPWCFTTDPSVRWEYCNLKKCSGTEA 367
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                                                                                                                                                                                                                       SGKQPWCYTTDPCVRWEYCNLTQCSETES 90
                                                                                                                                                                                                                                                                        TPVVQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPD 338
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nilarity 78.7%;
Conservative
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                                                                                                                                                                                                                                                                                                                                              Score 423; DB 3; Length 378; Pred. No. 8.9e-38; 8; Mismatches 11; Indels
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CURRENT FILING DATE: 1998-12-04
NUMBER OF SEQ ID NOS: 80
SOFTWARE: PATENTIN Ver. 2.0
SBQ ID NO 1
SBQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 42, Applicati
Patent No. 6521439
GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 378
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                           INFORMATION FOR SEQ ID NO: 42: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/09/335,325
FILING DATE: 17-Jun-1999
CLASSIFICATION: <URKnown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/612,788
FILING DATE: <URKnown>
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                   NAME: Warren, William L.
REGISTRATION NUMBER: 36,714
REFERENCE/DOCKET NUMBER: 05:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 404 818-3700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                           STRANDEDNESS: <Unknown>
TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: Angiostatin Fragments and Method of Use NUMBER OF SEQUENCES: 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Folkman, M. Judah
O'Reilly, Micheal
ORIGINAL SOURCE:
                    ANTI-SENSE: NO FRAGMENT TYPE: N-terminal
                                                        HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            339 ADKGPWCFTTDPSVRWEYCNLKKCSGTEA 367
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l Similarity 78.7%;
70; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET: 191 Peachtree Street, 37th Floor CITY: Atlanta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STATE: Georgia
                                                                                                                                       TYPE: amino acid
                                                                                                                                                          LENGTH: 378 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ZIP: 30303-1769
                                                                                                                                                                                                                  TELEFAX: 404-818-3799
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Pred. No. 8.9e-38;
8; Mismatches 11
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RESULT 9
US-09-377-250-4
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US-09-377-250-1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: MOD_RES; LOCATION: (341)
COTHER INFORMATION: Xaa = Gln
US-09-377-250-1
Sequence 4, Application US/09377250
Patent No. 6365364
GENERAL INFORMATION:
APPLICANT: MANN, KENNETH G.
APPLICANT: SWORDS JENNY, NANCY
TITLE OF INVENTION: ANGIOGENESIS INHIBITORS AND USERS THEREOF
FILE REFERENCE: 48409/360
CURRENT APPLICATION NUMBER: US/09/377,250
CURRENT FILING DATE: 1999-08-19
NUMBER OF SEQ ID NOS: 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: MANN, KENNETH G.
APPLICANT: SWORDS JENNY, NANCY
TITLE OF INVENTION: ANGIOGENESIS INHIBITORS AND USERS THEREOF
FILE REFERENCE: 48409/360
CURRENT APPLICATION NUMBER: US/09/377,250
CURRENT FILING DATE: 1999-08-19
NUMBER OF SEQ ID NOS: 5
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1, Application US/09377250 Patent No. 6365364
                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: MOD RES LOCATION: (53)
OTHER INFORMATION: 3
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OTHER INFORMATION: plasminogen fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ENGTH: 451
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IMMEDIATE SOURCE:
CLONE: K1-4BKLS
                                                                                                                                                                                                                                                                                                                                         351 TPVVQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 339 ADKGPWCFTTDPSVRWEYCNLKKCSGTEA 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      279 TPVVQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPD 338
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                                                                                                                                                                                                                                                                                  62 SGKQPWCYTTDPCVRWEYCNLTQCSETES 90
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78.7%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 423; DB 4; Length 378 Pred. No. 8.9e-38;
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 TELEX: 200154
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 790 amin
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Patent No. 573928
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APPLICANT: Thoege
                                                                         CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION UNMBER: 08/192,06
FILING DATE: February 4, 1994
ATTORNEY/AGENT INFORMATION:
NAME: Paul T. Clark
REGISTRATION NUMBER: 30,162
REFERENCE/DOCKET NUMBER: 0636
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617 542 8906
TELEPHONE: 617 542 8906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 452
TYPE: PRT
ORGANISM: Homo sapiens
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LOCATION: (342)
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OTHER INFORMATION: Xaa
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Etzerodt, Michael
TITLE OF INVENTION: Improved method for the refolding of
TITLE OF INVENTION: proteins
NUMBER OF SEQUENCES: 58
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                            ZIP: 02110-2804
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
SOFTWARE: #1.25
                                                                                                                                                                                                                                                                          CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/469,486
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                                                                                                                                                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: Boston
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amino acid
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               790 amino acids
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78.7%;
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ry 4, 1994
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Pred. No. 1.1e-37;
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; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-469-486-54
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                                                                                                                 ; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-469-658-54
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Best Local Similarity 70...
70; Conservative
                                                   Matches
                                                                   Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: June 5, 1995
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/192,060
FILING DATE: February 4, 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/469,658
FILING DATE: June 5, 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZIP: 02110-2804
COMPUTER READABLE FORM:
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CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
                                                                                                                                                                                                                                                                                REGISTRATION NUMBER: 30,162
REFERENCE/DOCKET NUMBER: 06
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617 542 5070
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: amino
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                                                                                                                                                                                                                                                                    TELEFAX: 617 542 8906
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                                                                                                                                                                                                  LENGTH:
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2 SPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGITENYCRNPD 61
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                                                                   Similarity
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78.7%;
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78.7%;
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                                                                                                                                                                                                                                                                                                                    06363/002002
                                                                 Score 423; DB 2; Length 790; Pred. No. 2.1e-37;
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Pred. No. 2.1e-37;
8; Mismatches 11
                                                   Mismatches
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                                                   Indels
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US-09-131-995-1
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                                         Sequence 1, Application US/09131995
Patent No. 5972896
GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                     Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Casuto, Dianne
REGISTRATION NUMBER: 40,943
REFERENCE/DOCKET NUMBER: 59
TELECOMMUNICATION INFORMATION:
TELEPHONE: 847-938-3137
APPLICANT: Davidson, TITLE OF INVENTION: 1
                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
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ATTORNEY/AGENT INFORMATION:
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OPERATING SYSTEM:
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STATE: IL
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                                                                                                                                                                                                                                                                                                      Local
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                                                                                                                                                                                                                         352 TPVVQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPD 411
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                                                                                                                                                             412 ADKGPWCFTTDPSVRWEYCNLKKCSGTEA 440
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                                                                                                                                                                                                                                                                                                        Similarity
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amino acid
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100 Abbott Park Road
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, Donald J.
NOVEL ANTIANGIOGENIC PEPTIDES
AND METHODS FOR INHIBITING ANGIOGENESIS
                                                                                                                                                                                                                                                                                                        78.5%;
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                                                                                                                                                                                                                                                                                                        Score 423; DB 1;
Pred. No. 2.1e-37;
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                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                       Length 791;
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CORRESPONDENCE ADDRESS:
ADDRESSEE: Abbott Laboratories
STREET: 100 Abbott Park Road

NUMBER OF SEQUENCES:

14

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US-08-832-087B-1
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                                                                                                                                                                                                                                                                           Sequence 1, Application US/08832087B
Patent No. 5981484
GENERAL INFORMATION:
APPLICANT: Davidson, Donald J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/832,087
FILING DATE: 03-APR-1997
APPLICATION NUMBER: 08/643,219
FILING DATE: 06-MAY-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Casuto, Dianne
REGISTRATION NUMBER: 5940
REFERENCE/DOCKET NUMBER: 5940
TELECOMMUNICATION INFORMATION:
TELEPHONE: 847-938-3137
TELEFAX: 847-938-2623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                     APPLICANT: Davidson, Donald J.
TITLE OF INVENTION: NOVEL ANTIANGIOGENIC PEPTIDES
TITLE OF INVENTION: AND METHODS FOR INHIBITING AND
NUMBER OF SEQUENCES: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY: 1
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 791 amino acid
                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                          CORRESPONDENCE ADDRESS:
ADDRESSEE: Abbott Laboratories
STREET: 100 Abbott Park Road
CITY: Abbott Park
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ Version 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
COMPUTER: IBM Compatible OPERATING SYSTEM: DOS SOFTWARE: FastSEQ Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER:
                                                                                            ZIP: 60064
                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                 412 ADKGPWCFTTDPSVRWEYCNLKKCSGTEA 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       352 TPVVQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLIMNYCRNPD
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Similarity 78.7%;
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GY: linear
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   FastSEQ Version 2.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 423; DB 2; Length 791; Pred. No. 2.1e-37;
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                                                                                                                                                                                                                                          FOR INHIBITING ANGIOGENESIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11; Indels
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APPLICATE:
PILING DATE:
ATTORNEY/AGENT INFORMATION:
ATTORNEY/AGENT INFORMATION:
NAME: Casuto, Dianne 40,943
REGISTRATION NUMBER: 40,943
REFERENCE/DOCKET NUMBER: 5940.US.P2
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TOTALEPHONE: 847-938-3137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1, Application US/08851350 Patent No. 6057122 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Casuto, Dianne
REGISTRATION NUMBER: 40,943
REFERENCE/DOCKET NUMBER: 5940
TELECOMMUNICATION INFORMATION:
TELEPHONE: 847-938-3137
TELEPAX: 847-938-2623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08
FILING DATE: 03-APR-1997
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: NOVEL ANTIANGIOGENIC PEPTIDES, TITLE OF INVENTION: POLYNUCLEOTIDES ENCODING SAME TITLE OF INVENTION: FOR INHIBITING ANGIOGENESIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: 08/6
FILING DATE: 06-MAY-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                         CLASSIFICATION: 514
PRIOR APPLICATION NUMBER:
                                                                                                                                                                                                                                                                       SOFTWARE: FastSEQ Version 2.0 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
ADDRESSEE: Abbott Laboratories
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM Compatible OPERATING SYSTEM: DOS
                                                                                                                                                                                                                                    APPLICATION NUMBER: FILING DATE: 05-MAN
                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: Abbott Park
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                412 ADKGPWCFTTDPSVRWEYCNLKKCSGTEA 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         62 SGKQPWCYTTDPCVRWEYCNLTQCSETES 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 SPVVQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNPD 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         70; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                 'RY: USA
60064-3500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100 Abbott Park Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Abbott Laboratories
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
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78.7%;
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Pred. No. 2.1e-37;
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Result

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Score

413 407 401

PID:g553187

Minimum DB Maximum DB

Title: Perfect score:

9

Scoring table:

Database

, <u>4</u> , 5	44	43	42	41	40	39	38	37	36	35	34	3	32	31	30
159	159	159	160	166.5	170	171.5	173	173	174.5	188.5	189	189.5	191.5	193.5	199.5
30.4	30.4	30.4	30.6	31.8	32.5	32.8	33.1	33.1	33.4	36.0	36.1	36.2	36.6	37.0	38.1
477	477	431	433	593	655	432	559	559	558	615	562	560	937	603	618
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JS0598	A34369	JS0599	UKBAY	S45281	A46688	S18932	A29941	A35029	JC5878	KFHU12	UKHUT	JC4795	A45082	S28941	A35827
	t-plasminogen acti	t-plasminogen acti	u-plasminogen acti	coagulation factor	hepatocyte growth	u-plasminogen acti	t-plasminogen acti	t-plasminogen acti	plasma hyaluronan-	coagulation factor	t-plasminogen acti	plasma hyaluronan-	neurotrophic recep	coagulation factor	thrombin (EC 3.4.2

## ALIGNMENTS

X',4396.4401 <EAT>
X',4396.4401 <EAT>
R;Wade, D.P.; Clarke, J.G.; Lindahl, G.E.; Liu, A.C.; Zyso Proc. Natl. Acad. Sci. U.S.A. 90, 1369-1373, 1993 . A;Title: 5' control regions of the apolipoprotein(a) gene A;Reference number: A47277; MUID:93165698; PMID:7679504 A;Accession: A47277 apoprotein(a) (EC 3.4.21.-) precursor [validated] - human N,Alternate names: apolipoprotein(a); lipoprotein(a) chain apo(a) C;Species: Homo sapiens (man) C;Species: Homo sapiens (man) C;Date: 30-Jun-1989 #sequence revision 30-Jun-1989 #text change 08-Dec-2000 C;Accession: S00657; A28017; Ā47277; I60906; A47233; I52415; I65286 R;MCLean, J.W.; Tomlinson, J.E.; Kuang, W.J.; Eaton, D.L.; Chen, E.Y.; Fless, G Nature 330, 132-1374 1987 Rature 330, 132-1374 1987 A;Title: CDNA sequence of human apolipoprotein(a) is homologous to plasminogen. A;Reference number: S00657; MUID:88039109; PMID:3670400 A;Accession: S00657; MUID:88039109; PMID:3670400 A;Molecule type: mRNA
A;Residues: 1-4548 cMCL>
A;Cross-references: GB:X06290; EMBL:X06696; NID:g28619; PIDN:CAA29618.1; PID:g28620
A;Cross-references: GB:X06290; EMBL:X06696; NID:g28619; PIDN:CAA29618.1; PID:g28620
R;Eaton, D.L.; Fless, G.M.; Kohr, W.J.; McLean, J.W.; Xu, Q.T.; Miller, C.G.; Lawn, R.M. Proc. Natl. Acad. Sci. U.S.A. 84, 3224-3228, 1987
A;Title: Partial amino acid sequence of apolipoprotein(a) shows that it is homologous to A;Reference number: A28017; MUID:87204109; PMID:3472206
A;Accession: A28017 A;Cross-references: GB:M90078; NID:g178786; PIDN:AAA35547.1; PID:g553188 A;Note: apo(a) gene 1 (nomenclature of reference I52415) A;Reference number: A47233; MUID:93087573; PMID:1454851 A;Accession: I60906 A;Cross-references: GB:L07899; NID:g967973; PID:g967974 R;Malgaretti, N.; Acquati, F.; Magnaghi, P.; Bruno, L.; Proc. Natl. Acad. Sci. U.S.A. 89, 11584-11588, 1992 A;Title: Characterization by yeast artificial chromosom A;Status: preliminary; translation not shown; translated A;Molecule type: DNA A;Residues: 1-16 <RES> A;Note: apo(a) gene 1 (nomenclature of reference A;Status: preliminary; translated from GB/EMBL/DDBJ A;Molecule type: protein A;Residues: 20-21,'P',23-34;177-179,'N',181-186,'T',188-196,'DKG',200;292-314,'W',316-3 chromosome cloning of the linked apoli A.C.; Zysow, B.R.; Meer, K.; Schwartz, L.; Pontoglio, M.; Rocchi, M.; D.L.; Chen, E.Y.; Fless, G.M.; Scam from GB/EMBL/DDBJ and members of the related Sa

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A;Cross-references: GB:M86877; NID:g178780; PIDN:AAB49909.1; PID:g553185
A;Note: apo(a) gene 1 (nomenclature of reference I52415)
A;Accession: I65286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-16 < RE3 >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A_rMap position: 6q26-6q27
A_rNote: several genes closely linked on chromosome 6 are identical in the first coding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
A; Residues: 1-16 < RE4 >
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Superfamily: apolipoprotein(a); kringle homology; trypsin hom; keywords: hydrolase; kringle; lipid binding; lipoprotein; ser; 1-19/Domain: signal sequence #status predicted <SIG>; 20-4548/Product: apolipoprotein(a) #status experimental <MAT>; 28-105/Domain: kringle homology <KR1>; 142-219/Domain: kringle homology <KR2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;1054-1131/Domain:
;1168-1245/Domain:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;598-675/Domain: kringle homology <KR6>
;712-789/Domain: kringle homology <KR7>
;826-903/Domain: kringle homology <KR8>
;940-1017/Domain: kringle homology <KR8>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;484-561/Domain: kringle homology <KR5>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gene: GDB:LPA
Cross-references: GDB:120699; OMIM:152200
                                                                                                                                                                                                                                                                                                              ;3562-3639/Domain:
                                                                                                                                                                                                                                                                                                                                            3334-3411/Domain:
                                                                                                                                                                                                                                                                                                                                                                                            ;2992-3069/Domain:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1396-1473/Domain:
1510-1587/Domain:
                                                                                                                                                                                                                                                                               :3782-3859/Domain:
                                                                                                                                                                                                                                                                                                                                                             3220-3297/Domain:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1624-1701/Domain:
                                                                                                                               Matches
                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1966-2043/Domain:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8-1815/Domain:
                                                                                                                                            Local
 4181 GPWCFTMDPSIRWEYCNLTRCSDTEGTVV 4209
                                61
                                                                                                                                  88;
                                                                                                                                              Similarity
                       GPWCFTTDPSIRWEYCNLTRCSDTEGTVV 89
                                                                VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADT 4180
                                                                                 VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYFNDGLTMNYCRNPDADT 60
                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        kringle homology <KR10>
kringle homology <KR11>
kringle homology <KR12>
kringle homology <KR13>
kringle homology <KR13>
kringle homology <KR14>
kringle homology <KR16>
kringle homology <KR16>
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kringle
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apolipoprotein(a) (EC 3.4.21.-) - rhesus macaque (fragment)
C;Species: Macaca mulatta (rhesus macaque)
C;Date: 22-Nov-1989 #sequence revision 22-Nov-1989 #text_change 22-Jun-1999
C;Accession: A32869, A30848
R;Tomlinson, J.E.; McLean, J.W.; Lawn, R.M.
J. Biol. Chem. 264, 5957-5965, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N;Contains: angiostatin; microproserver., F
N;Contains: angiostatin; microproserver., F
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Jacession: A35229; IS2242; A26646; I62738; I84609; S03735; A00929; A04627; A04625, A046
C;Accession: A35228; IS2242; A26646; I62738; I84609; S.W.
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A,Residues: 1-810 <PET>
A,Byperimental source: leukocyte; lung fibroblast
A,Byperimental source: leukocyte; lung fibroblast
A,Byperimental source: leukocyte; lung fibroblast
B,Malgaretti, N.; Bruno, L.; Pontoglio, M.; Candiani, G.; Meroni, G.; Ottolenghi, S.;
Biochem. Biophys. Res. Commun. 173, 1013-1018, 1990
A,Title: Definition of the transcription initiation site of human plasminogen gene in A,Reference number: 152242; MUID:91097523; PMID:2268308
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F;278-355/Domain: kringle homology <KR3>
F;378-165/Domain: kringle homology <KR4>
F;506-583/Domain: kringle homology <KR5>
F;506-697/Domain: kringle homology <KR5>
F;620-697/Domain: kringle homology <KR6>
F;726-803/Domain: kringle homology <KR7>
F;726-803/Domain: kringle homology <KR8>
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A;Title: Rhesus monkey apolipoprotein(a). Sequence, evolution, A;Reference number: A32869; MUID:89174660; PMID:2925643
A;Accession: A32869
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F;50-127/Domain: kringle homology <KRl>
                                                                                                A;Cross-references: GB:M62890; NID:g190092; PIDN:AAA36454.1; PID:g553613 R;Forsgren, M.; Raden, B.; Israelsson, M.; Larsson, K.; Heden, L.O. FEBS Lett. 213, 254-260, 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J. Biol. Chem. 265, 6104-6111, 1990
A;Title: Characterization of the gene for human plasminogen,
A;Reference number: A35229; MUID:90202879; PMID:2318848
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N;Alternate names: plasminogen precursor [misnomer]
N;Contains: angiostatin; microplasmin; plasminogen
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A;Title: Molecular cloning and characterization of a full-length cDNA clone A;Reference number: A26646; MUID:87162490; PMID:3030813 A;Accession: A26646
                                                                                                                                                                                                                A; Molecule type: DNA
A; Residues: 1-16 < MAL1>
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Pred. No. 6.7e-41;
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A;Molecule type:

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R;Vali, Z.; Patthy, L.
R;Vali, Z.; Patthy, L.
J. Biol. Chem. 259, 13690-13694, 1984
A;Title: The fibrin-binding site of human plasminogen. Arginines 32 and 34 are essential A;Title: The fibrin-binding site of human plasminogen. Arginines 32 and 34 are essential A;Title: The fibrin-binding site of human plasminogen. Arginines 32 and 34 are essential A;Title: The fibrin-binding site; pMID:6094526
A;Contents: annotation; fibrin binding site; omega-aminocarboxylic acid binding site
A;Contents: annotation; fibrin binding site; omega-aminocarboxylic acid binding site
A;Contents: annotation; fibrin binding site; omega-aminocarboxylic acid binding site
                                                                                                                                                                                                                 R.Trexler, M.; Vali, Z.; Patthy, L.
J. Biol. Chem. 257, 7401-7406, 1982
A;Title: Structure of the omega-aminocarboxylic acid-binding site
A;Reference number: A92382; MUID:82213905; PMID:6919539
A;Contents: annotation; omega-aminocarboxylic acid binding sites
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A; Residues: 483-507, 'E', 509-604 <WI3>
R; Robbins, K.C.; Bernabe, P.; Arzadon, L.; Summaria, L.
J. Biol. Chem. 240, 1631-1633, 1973
A; Title: The primary structure of human plasminogen. II.
A; Reference number: A92125; MUID: 73149248; PMID: 4694729
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A;Title: Characterization of a complementary deoxyribonucleic A;Reference number: 145961; MUID:85023311; PMID:6148961
A;Accession: 162738
                                                                                                                                                                                                                                                                                                                                                                                                                   R;Groskopf, W.R.; Summaria, L.; Robbins, K.C.
J. Biol. Chem. 244, 3590-3597, 1969
A;Tille: Studies on the active center of human plasmin.
A;Reference number: A92048; MUID:69234739; PMID:4240117
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Eur. J. Biochem. 58, 539-547, 1975
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A;Title: Primary structure of the B-chain of human plasmin
A;Reference number: A04627; MUID:77225245; PMID:142009
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A; Residues: 20-71,
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submitted to the Atlas,
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Eur. J. Biochem. 114, 465-470, 1981
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A; Residues: 367-419
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A;Residues: 292-471,'D',473-810 <MAL2>
A;Cross-references: GB:K02922; NID:g190112;
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Experimental source: liver
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1,'E',73-85,87-106,'D',108-360,'E',362-810
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L.; Petersen, T.E.;
Atlas, July 1977
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Lergier, W.;
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                                                  A;Contents: annotation; conformation by (1)H-NMR C;Comment: Plasminogen is synthesized by the kidr C;Comment: Plasminogen is converted to plasmin by d PIR:FGHUGB).
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R,Rejante, M.R.; Llinas, M.

R,Rejante, M.R.; Llinas, M.

Eur. J. Biochem. 221, 927-937, 1994

Eur. J. Biochem. 221, 927-937, 1994

A,Title: (1)H-NMR assignments and secondary structure of human plasminogen

A,Reference number: S43645; MUID:94237157; PMID:8181475

A,Contents: annotation; conformation by (1)H-NMR, residues 96-184
                                                                                                                                                                                                                                                                                                                                                                                                                        R;Rejante, M.; Llinas, M.
submitted to the Brookhaven Protein Data Bank,
A;Reference number: A65803; PDB:1HPJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Biochemistry 30, 10576-10588, 1991
A;Title: Crystal and molecular structure of human plasminogen
A;Title: Crystal and molecular structure of human plasminogen
R;Rejante, M.R.; Lilnas, M.

Eur. J. Biochem. 221, 939-949, 1994

A;Tille: Solution structure of the epsilon-aminohexanoic

A;Reference number: A58817; MUID:94237158; PMID:8181476
                                                                                                                                                                                                                                                                                                      R;Rejante, M.; Llinas, M.
submitted to the Brookhaven Protein Data Bank, August 1996
A;Reference number: A65804; PDB:1HPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              submitted to the Brookhaven Protein Data Bank, A, Reference number: A65980; PDB:1KRN
A, Contents: annotation; X-ray crystallography,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Title: Crystal structure of the kringle 2 domain of tissue A;Reference number: A39483; MUID:92118803; PMID:1310033 A;Contents: annotation; X-ray crystallography, 2.4 angstroms R;Stec, B.; Teeter, M.M.; Whitlow, M.; Yamano, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Wu, T.P.; Padmanabhan, K.; Tulinsky, A.; Mulichak, A.M.
Biochemistry 30, 10589-10594, 1991
A;Title: The refined structure of the epsilon-aminocaproic acid complex of human plasminc A;Reference number: A58818; MUID:92031503; PMID:1657149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        submitted to the Brookhaven Protein Data Bank, A, Reference number: A65245; PDB:ICB A; Contents: annotation; X-ray crystallography, R; Milichak, A.M.; Tulinsky, A.; Ravichandran, K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  J. Biol. Chem. 271, 29461-29467, 1996
A;Title: Kringle domains of human angiostatin. Characterization of the anti-proliferative A;Reference number: A58811; MUID:97067211; PMID:8910613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R;de Vos, A.M.; Ultsch, M.H.; Kelley, R.F.; Padmanabhan, K.; Biochemistry 31, 270-279, 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Padmanabhan, K.; Tulinsky, A. submitted to the Brookhaven Protein Data Bank, A;Reference number: A52408; PDB:1PMK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R; Wu, T.P.; Tulinsky, A. submitted to the Brookhaven Protein Data Bank,
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submitted to the Brookhaven Protein Data Bank,
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                                                                                                                                                                                                                                                                          A; Contents: annotation; conformation by (1) H-NMR, residues 103-181
                                                                                                                                                                                                                                                                                                                                                                                               A; Contents: annotation;
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A; Contents: annotation; X-ray crystallography,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Tulinsky, A.; Mathews,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Contents: annotation; X-ray crystallography,
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                                                                                                                                                                                                                                                                                                                                                                                                  conformation by (1)H-NMR, residues 103-181
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by the kidney and is present in plasma and many oth plasmin by plasminogen activators (see PIR:UKHU ar

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plasmin (EC 3.4.21.7) precursor - rhesus macaque
C;Species: Macaca mulatta (rhesus macaque)
C;Accession: B32869 #Sequence revision 31-Mar-1989 #text_change 22-Jun-1999
C;Accession: B32869 #Sequence, evolution, and sites of synthesis.
A;Reference number: A32869; MUID:89174660; PMID:2925643
A;Reference number: A32869; MUID:89174660;
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F; 1-19/Domain: slighal sequence #status predicted cSIG>
F; 20-810/Product: plasminogen #status predicted cSIG>
F; 20-96/Domain: activation peptide #status experimental cAPT>
F; 99-466/Product: angiostatin #status experimental cAPT>
F; 99-580/Foroduct: angiostatin #status experimental cAPT>
F; 99-580/Domain: plasmin chain A #status experimental cMAT>
F; 103-181/Domain: kringle homology cKR1>
F; 103-181/Domain: kringle homology cKR3>
F; 103-52/Domain: kringle homology cKR3>
F; 103-53/Domain: kringle homology cKR3>
F; 103-54/Domain: kringle homology cKR3>
F; 103-54/Domain: kringle homology cKR5>
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A;Introns: 17/1; 62/2; 98/1; 136/2; 181/1. C;Function:
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Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GPWCFTTDPSVRWEYCNLKKCSGTEASVV 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPDADK
                                                                                    site: His, Asp, Ser #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98/1; 136/2; 183/1; 223/2; 263/1; 317/2; 366/1; 419/2; 480/1; 529
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. 1.26
7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 444;
Score 433;
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L.2e-37;
    B
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Length 810;
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F/8-103/Domain: plasmingen-related protein precursor homology <PLPH>
F/8-103/Domain: plasmingen #status experimental <PRO>
F/27-812/Product: plasmingen #status experimental <APT>
F/104-83/Domain: activation peptide #status experimental <APT>
F/104-83/Domain: plasmin chain A #status experimental <AMT>
F/104-583/Domain: kringle homology <KR1>
F/104-88/Domain: kringle homology <KR3>
F/282-359/Domain: kringle homology <KR3>
F/282-359/Domain: kringle homology <KR3>
F/384-461/Domain: kringle homology <KR3>
F/384-461/Domain: kringle homology <KR5>
F/384-805/Domain: kringle homology <KR5>
F/384-805/Domain: kringle homology <KR5>
F/384-805/Domain: trypsin homology <KR7>
F/564-80,60-68,110-188,131-171,159-183,192-269,195-323,213-252,241-264,282-359,303-342,33:
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PLBO
plasmin (EC 3.4.21.7) precursor - bovine
plasmin (EC 3.4.21.7) precursor - bovine
N,Alternate names: plasminogen
C;Species: Bos primigenius taurus (cattle)
C;Date: 30-Sep-1987 #sequence revision 28-Apr-1995 #text_change 18-Jun-1999
C;Accession: $45046; A25835; I45961; S03736
C;Accession: $45046; A25835, I45961; S03736
                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Pathway: fibrinolysis
C;Superfamily: plasmin; kringle homology; plasminogen-related protein precursor homology.
C;Superfamily: plasmin; fibrinolysis; glycoprotein; hydrolase; kidney; kringle; plasma;
C;Keywords: duplication; fibrinolysis; glycoprotein; SIG>
F;1-26/Domain: signal sequence #status predicted <SIG>
F;8-103/Domain: plasminogen-related protein precursor homology <PLPH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eur. J. Blochem. 114, 465-470, 1981
A;Title: Comparison of the primary structure of the N-terminal CNBr fragments of human, A;Reference number: S03735; MUID:81212097; PMID:7238497
A;Reference number: S03736
A;Accession: S03736
A;Molecule type: protein
A;Residues: 27-83 <BRU>
C;Function:
C;Function: dissolves the fibrin of blood clots; acts as a proteolytic factor in a value walls of the graafian follicle; also activates the urokinase-type plasminogen act
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Experimental source: liver
A;Note: it is uncertain whether Met-1 or Met-8 is the initiator
R;Schaller, J.; Moser, P.W.; Dannegger-Muller, G.A.K.; Rosselet,
Eur. J. Biochem. 149, 267-278, 1985
B;Title: Complete amino acid sequence of bovine plasminogen. Comp
A;Reference number: A25835; MUID:85203906; PMID:3846532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Molecule type: protein
A;Residues: 27-334,'D',336-515,'H',517-554,'L',556-812 <SCH>
A;Residues: 27-334,'D',336-515,'H',517-554,'L',556-812 <SCH>
R;Malinowski, D.P.; Sadler, J.E.; Davie, E.W.
Biochemistry 23, 4243-4250, 1984
B;Title: Characterization of a complementary deoxyribonucleic acid coding for human and A;Reference number: 145961; MUID:85023311; PMID:6148961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Berglund, L.; Andersen, M.D.; Petersen, T.E. submitted to the EMBL Data Library, May 1994
A;Description: Cloning and characterizatin of the bovine plasminogen cDNA.
A;Reference number: S45046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
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A;Residues: 706-743, 'R',745-812 <MAL>
A;Cross-references: GB:K02935; NID:g163551; PIDN:AAA30714.1; PID:g163552
R;Brunisholz, R.A.; Lerch, P.G.; Schaller, J.; Rickli, B.B.; Lergier, W.;
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predicted
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N;Alternate names: plasminogen
C;Species: Capra aegagrus hircus (domestic goat)
C;Date: 28-Oct-1994 #sequence_revision 28-Oct-1994 #text_change 12-May-1995
C;Accession: C61545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     plasmin (EC 3.4.21.7) precursor - dog (fragments)
N;Alternate names: plasminogen
C;Species: Canis lupus familiaris (dog)
C;Date: 28-Oct-1994 #sequence_revision 28-Oct-1994 #text_change 12-May-1995
C;Accession: E61545
R;Schaller, J: Rickli, E.E.
Enzyme 40, 63-69, 1988
A;Title: Structural aspects of the plasminogen of various species.
A;Reference number: A61545; MUID:89005015; PMID:3168975
A;Accession: E61545
                                                                                                                                                                                     A; Molecule type: protein A; Residues: 1-123 <SCH>
                                                                                                                                                                                                                                                                   A; Title: Structural aspects of the plasminogen of various species A; Reference number: A61545; MUID:89005015; PMID:3168975
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Enzyme 40, 63-69, 1988
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F;37-114/Domain: kringle homology <KR4>
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Best Local S
Matches 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;Residues: 1-120 <SCH>
;Superfamily: plasmin; kringle homology; plasminogen-related protein precursor homology
;Keywords: hydrolase; serine proteinase
                                                                                                                       ;41-118/Domain: kringle homology <KR4>
                                                                                                                                          Superfamily: plasmin; kringle homology; Keywords: hydrolase; serine proteinase
                                                            Query Match
Best Local &
                                         Matches
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Best Local :
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                                      65;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMYYCRNPDADT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  65;
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Similarity 79.5%;
                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QDCYHGNGQSYRGTSSTTITGRKCQSWSSMTPHRHLKTPENYPNAGLTMNYCRNPDADKS 441
RQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VQECYHGNGQSYRGTSSTTITGRKCQSWSSMTPHRHEKTPEHFPEAGLTMNYCRNPDADK 93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PWCYTTDPRVRWEFCNLKKCSET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PWCFTTDPSIRWEYCNLTRCSDT 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                            77.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 79.0%; Score 413; 74.7%; Pred. No. 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12;
                                      8,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                            Score 407; DB 2;
Pred. No. 1.1e-34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 415; DB 1; Length 812; Pred. No. 1.1e-34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                plasminogen-related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
.6e-35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10;
                                                                             Length 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                         Indels
                                                                                                                                                                  protein
                                      0,
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                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                precursor homology
  61
                                      0,
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A;Molecule type: protein
A;Molecule type: protein
A;Residues: 1-57 <BRU>
A;Residues: 1-57 <BRU>
R;Marti, T.; Schaller, J.; Rickli, E.E.
R;Marti, T. Schaller, J.985, 1985
Eur. J. Biochem. 149, 279-285, 1985
A;Title: Determination of the complete amino-acid sequence
A;Title: Determination of the complete Amino-acid sequence
                                                                                                                                                                                                                                                                                                                                                                                         F;166-243/Domain: kringle homology <KR2>
F;256-333/Domain: kringle homology <KR3>
F;358-435/Domain: kringle homology <KR4>
F;358-435/Domain: kringle homology <KR4>
F;450-790/Product: miniplasminogen #status experimental <MIN>
F;461-540/Domain: kringle homology <KR5>
F;461-540/Domain: kringle homology <KR5>
F;561-790/Product: plasmin chain B #status experimental <BCH>
F;561-790/Product: plasmin chain B #status experimental <BCH>
F;561-783/Domain: trypsin homology <TRY>
F;561-783/Jomain: trypsin homology <TRY>
F;305-54,34-42,84-162,105-145,133-157,166-243,169-297,187-226,215-238,256-333,277-316,305-
                                               S
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         F;1-790/Product: plasminogen #status predicted <PRO>
F;1-77/Domain: plasminogen-related protein precursor homology
F;1-77/Domain: activation peptide #status predicted <APT>
F;18-560/Product: plasmin chain A #status predicted <ACH>
F;84-162/Domain: kringle homology <RR1>
F;84-162/Domain: kringle homology <RR1>
F;84-162/Domain: kringle homology <RR1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Description: dissolves the ns the walls of the graafian A;Pathway: fibrinolysis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R;Brunisholz, R.A.; Lerch, P.G.; Schaller, J.; Rickli, I
Eur. J. Biochem. 114, 465-470, 1981
A;Title: Comparison of the primary structure of the N-to
A;Reference number: S03735; MUID:81212097; PMID:7238497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Species: Sus scrofa domestica (domestic pig)
C;Date: 07-Sep-1990 #sequence-vision 01-Nov-1996 #text_change 18-Jul-1997
C;Accession: S03733; S03737; A25834
R;Schaller, J.; Marti, T.; Roesselet, S.J.; Kaempfer, U.; Rickli, E.E.
Fibrinolysis 1, 91-102, 1987
P:Tibrinolysis 1, 91-102, 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                plasmin (EC 3.4.21.7) precursor - N;Alternate names: plasminogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C;Superfamily: plasmin; kringle homology; plasminogen-related protein precursor homology; C;Keywords: fibrinolysis; glycoprotein; hydrolase; kidney; kringle; plasma; serine protei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C; Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: protein A; Residues: 450-790 < MAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Accession: A25834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Residues: 1-560 <SCH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Accession: S0373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N; Contains: miniplasminogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Accession:
                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                        Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                            : #status predicted,
,645,740/Active sit
                                                                                                                                                                                                                                                     Local
416
                                                                                                              356
                                                     62
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                                                                                                                                                                                                                             64;
                                                                                                                                                                       N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S03737
                                                                                                                                                                                                                                                           Similarity
                                                                                                              QDCYRGNGESYRGTSSTTITGRKCQSWVSMTPHRHEKTPGNFPNAGLTMNYCRNPDADKS: 415
                                                                                                                                                     RQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PWCFTTDPSIRWEYCNLTRCSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QDCYHGNGQSYRGTSSTTVTGRKCQSWSSMI PHRHQKTPESYPNAGLTMNYCRNPDADKS
PWCYTTDPRVRWEYCNLKKCSETEQQV
                                                     PWCFTTDPSIRWEYCNLTRCSDTEGTV 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PWCYTTDPRVRWEFCNLKKCSE 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <MAR>
                                                                                                                                                                                                                                                                                                                                            site: His, Asp, Ser #status predicted
                                                                                                                                                                                                                                                        76.7%;
73.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fibrin of blood clots; acts as a proteolytic factor in a var follicle; also activates the urokinase-type plasminogen acti
                                                                                                                                                                                                                             10;
                                                                                                                                                                                                                                                        Score 401; DB 1;
Pred. No. 2.8e-33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Schaller, J.; Rickli, E.E.; Lergier,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pig (fragment)
                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       83
442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the N-terminal CNBr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of porcine plasmin.
                                                                                                                                                                                                                                13;
                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (fragment) <PLPH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Comparison of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              fragments of human, k
                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    W.; Manneberg,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        miniplasminogen
                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98
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Cal

RESULT

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A; Accession: A38514
A; Molecule type: mRNA
A; Residues: 1-812 < DEG>
A; Cross-references: GB:J04766; NID:g200402; PIDN:AAA50168.1; PID:g200403
A; Cross-reference number: S48202; MUID:g5010076; PMID:7523120
A; Reference number: S48202; MUID:g5010076; PMID:7523120
A; Residues: S48202
A; Accession: S48202
A; Molecule type: protein
A; Residues: 20-25 < LIJ>
A; Accession: S48203
A; Molecule type: protein
A; Residues: 22-27 < LI2>
C; Comment: Plasminogen is synthesized by the kidney and is present in plasma and many ot C; Comment: Plasminogen is synthesized by the kidney and is present in plasmin mediately after dissociation from the clot. In the presence of the inhibitor, the activation involves also removal of the activation peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              plasmin (EC 3.4.21.7) precursor - mouse N;Contains: angiostatin; plasminogen C;Species: Mus musculus (house mouse) C;Date: 20-Sep_1991 #sequence revision 01-Nov-1996 #text_change 18-Jun-1999 C;Accession: A38514; S48202; S48203 C;Accession: A38514; S48202; S48203 C;Accession: A38514; S48202; Schaefer, L.A.; Elliott, R.W. Genomics B, 49-61, 1990 Genomics B, 49-61, 1990 Genomics B, 49-61, 1990 A;Title: Characterization of the cDNA coding for mouse plasminogen and localization A;Reference number: A38514; MUID:91184812; PMID:2081600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                e inhibitor, the activation involves also removal of the activation peptide. C; comment: Stromelysin 1 (see PIR:KCMSS1) acts on plasminogen to produce angiostatin. To eful in treating solid tumors.

C; Function:

C; Function:

A; Description: dissolves the fibrin of blood clots; acts as a proteolytic factor in a value of the graafian follicle; also activates the urokinase-type plasminogen act the walls of the graafian follicle; also activates the urokinase-type plasminogen act pathway: fibrinolysis

C; Superfamily: plasmin; kringle homology; plasminogen-related protein precursor homology

C; Superfamily: plasmin, kringle homology; plasminogen-related protein; hydr

F;1-96/Domain: plasminogen-related protein precursor homology F;1-19/Domain: signal sequence #status predicted <SIG>F;1-19/Domain: signal sequence #status predicted <SIG-F;20-96/Domain: signal sequence #status predicted <APT>
F;9-166/Product: angiostation peptide #status predicted <APT>
F;9-166/Product: angiostation peptide #status predicted <APT>
F;9-166/Product: angiostation mediates predicted <APT>
F;9-166/Product: angiostation peptide #status predicted <APT>
F;9-166/Product: angiostation mediates and predicted <APT>
F;9-166/Product: angiostation predicted <APT>
F
RESULT 10
I46260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 F;103-181/Domain: kringle homology <KR1>
F;185-262/Domain: kringle homology <KR2>
F;275-352/Domain: kringle homology <KR2>
F;277-352/Domain: kringle homology <KR4>
F;377-454/Domain: kringle homology <KR4>
F;481-560/Domain: kringle homology <KR5>
F;481-560/Domain: chain B #status predicted <BCH>
F;582-805/Domain: trypsin homology <TRY
F;582-805/Domain: trypsin homology <TRY
F;49-73,53-61,103-181,124-164,152-176,185-262,188-316,206-245,234-257,275-352,296-335,32
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                                                                                                                                                                                                                              밁
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ,667,762/Active site: His, Asp, Ser #status predicted
                                                                                                                                                                                                                                    434 GPWCYTTDPSVRWEYCNLKRCSETGGSVV
                                                                                                                                                                                                                                                                                                                                          61 GPWCFTTDPSIRWEYCNLTRCSDTEGTVV 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                            VQECYQSDGQSYRGTSSTTITGKKCQSWAAMFPHRHSKTPENFPDAGLEMNYCKNPDGDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                76.5%; Score 400; DB 1; 70.8%; Pred. No. 3.7e-33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                          462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           experimental
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A;Accession: 54040;
A;Molecule type: protein
A;Residues: 118-460 <SCC2>
A;Molecule type: protein
A;Residues: 118-460 <SCC2>
C;Superfamily: plasmin; kringle homology; plasminogen-related protein precursor homology, C;Superfamily: plasmin; kringle homology (fragments) #status experimental <PRO>
F;1-37,Ba-117,118-460/Product: plasminogen (fragments) #status experimental <APT>
F;1-37,Domain: activation peptide (fragment) #status experimental <APT>
F;31-11,Domain: kringle homology <RV4>
F;118-460/Product: miniplasminogen #status experimental <MIN>
F;118-460/Pomain: kringle homology <KR45>
F;121-11,Domain: kringle homology <KR55
F;226-460/Domain: plasmin chain B #status experimental <BCH>
F;321-455/Domain: trypsin homology <TRY>
F;321-455/Domain: trypsin homology <TRY>
F;321-455/Domain: trypsin homology <TRY>
F;321-455/Domain: trypsin homology <TRY>
F;321-455/Domain: brypsin homology <TRY>
F;321-455/Domain: trypsin homology <TRY>
F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R/Schaller, J.; Rickli, E.E.

Enzyme 40, 63-69, 1988

A;Title: Structural aspects of the plasminogen of various species.

A;Reference number: A61545; MUID:89005015; PMID:3168975

A;Recession: B61545

A;Rolecule type: protein

A;Residues: 1-37;38-117 <SCH>

A;Residues: 1-37;38-117 <SCH>

R;Schaller, J.; Straub, C.; Kaempfer, U.; Rickli, E.E.

Protein Seq. Data Anal. 5, 21-25, 1992

A;Reference number: S28200; MUID:93149995; PMID:1492092

A;Reference number: S28200; MUID:93149995; PMID:1492092
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F;103-181/Domain: kringle homology <KR1>
F;185-262/Domain: kringle homology <KR2>
F;275-352/Domain: kringle homology <KR3>
F;379-456/Domain: kringle homology <KR4>
F;482-561/Domain: kringle homology <KR4>
F;482-561/Domain: kringle homology <KR5>
F;482-803/Domain: trypsin homology <KR5>
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A;Title: The recurring evolution of Lp(a): Insights from cloning of hedgehog apolipoprote A;Reference number: I46259; MUID:96025778; PMID:7592597
A;Accession: I46260
A;Status: preliminary; translated from GB/EMBL/DDBJ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Molecule type: mRNA
A;Residues: 1-810 cLAW-
A;Residues: 1-810 cLAW-
A;Cross-references: EMBL:U33171; NID:g1046360; PID:g1046361
C;Superfamily: plasmin; Kringle homology: plasminogen-related
C;Keywords: hydrolase; serine proteinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Species: Ovis orientalis aries, Ovis C;Date: 28-Oct-1994 #sequence_revision C;Accession: B61545; $28200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   plasmin (EC 3.4.21.7) precursor N; Alternate names: plasminogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
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                                       Best
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Similarity
62; Conser
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    Conservative
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78.5%;
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Pred. No. 2.4e-32;
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                                            Score 388;
Pred. No.
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01-Nov-1996 #text_change 17
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                                                5e-32;
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A;Molecule type: protein
A;Residues: 118-455 <SC2>
A;Residues: 118-455 (SC2)
C;Superfamily: plasmin; kringle homology; plasminogen-related protein precursor homology
C;Keywords: fibrinolysis; glycoprotein; hydrolase; kringle; plasma; serine proteinase; z
F;1-33,34-117,118-455/product: plasminogen (fragments) #status experimental <PRO>
F;1-33/Domain: activation poputie (fragment) #status experimental <APT>
F;34-117,118-225,226-455/product: plasmin (fragments) #status experimental <MAT>
F;37-114/Domain: kringle homology <KR4>
                                                                                                                                                                                               A;Molecule type: protein
A;Residues: 1-33;34-117 <SCH>
R;Schaller, J.; Straub, C.; Kaempfer, U.; Rickli, E.E.
R;Schaller, J.; Straub, C.; Kaempfer, U.; Rickli, E.E.
Protein Seq. Data Anal. 4, 69-74, 1991
A;Title: Complete amino acid sequence of equine miniplasminogen.
A;Reference number: S17527; MUID:92052077; PMID:1946332
A;Accession: S17527
                                                                                                                                                                                                                                                                                                                                                                                                                      Enzyme 40
A; Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: GB:M62832; NID:g206215; PIDN:AAA41884.1; PID:g554488
A;Note: the authors translated the codon TCT for residue 76 as Ala
C;Superfamily: plasmin; kringle homology; plasminogen-related protein precursor homology
C;Keywords: fibrinolysis; glycoprotein; hydrolase; kringle; serine proteinase
P;34-112/Domain: kringle homology <KRG>
F;34-112,55-95,83-107/Disulfide bonds: #status predicted
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A;Title: Identification of the rat Heymann
A;Reference number: A40522; MUID:91250378;
A;Accession: A40522
                                                                                                                                                                                                                                                                                                                                                                                         A; Title: Structural aspects of the plasminogen of various A; Reference number: A61545; MUID:89005015; PMID:3168975
                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Schaller, J.; R:
Enzyme 40, 63-69,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Species: Equus caballus (domestic horse)
C;Date: 28-Oct-1994 #sequence_revision 01-Nov-1996
C;Accession: A61945; S17527
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A; Residues: 1-169 < KAN>
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9, 1988
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#status experimental <MIN>
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RESULT
T18518
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N,Alternate names: plasminogen
C,Species: Gallus gallus (chicken)
C,Date: 22-dan-1993 #sequence_revision 22-Jan-1993 #text_change 16-Jul-1999
C,Accession: A60140
                                                                                                  A;Residues: 1-2869 <LAW>
A;Cross-references: EMBL:U33170;
A;Experimental source: liver
                                                                                                                                                                                                                                                                                                                  apolipoprotein(a) - western European hedgehog (fragment)
C;Species: Erinaceus europaeus (western European hedgehog)
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 07-Dec-1999
C;Accession: T18518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Molecule type: protein
A;Residues: 1-89 <GYES
C;Superfamily: plasmin; kringle homology; plasminogen-related protein
C;Superfamily: plasmin; kringle homology; plasminogen-related protein
C;Keywords: fibrinolysis; glycoprotein; hydrolase; kringle; plasma; s
F;6-83,27-66,55-78,Djsulfide bonds: #status predicted
F;6-83,27-66,55-78,Djsulfide bonds: #status predicted
F;6-93,27-66,55-78,Djsulfide bonds: #status predicted
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Biochim. Biophys. Acta 832, 326-330, 1985
Biothim. Biophys. Acta 832, 326-330, 1985
A;Title: The kringle 4 domain of chicken plasminogen.
A;Title: The kringle 4 domain of chicken plasminogen.
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F;226-448/Domain: trypsin homology <TRY>
F;267,310,405/Active site: His, Asp, Ser #status predicted
                                                                                                                                                                 A; Status: preliminary; translated A; Molecule type: mRNA
                                                                                                                                                                                                                                    J. Biol. Chem. 270, 24004-24009, 1995
A;Title: The recurring evolution of Lp(a):
A;Reference number: I46259; MUID:96025778;
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Biochim. Biophys. Acta
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                                                                                                                                                                                                                                  A; Reference number: 146259;
                                                                                                                                                                                                                                                                                          R;Lawn, R.M.; Boonmark, N.W.; Schwartz, K.; Lindahl, G.E.; Wade,
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                                                            ;Comment: The lipoprotein apolipoprotein(a).
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DISEASE: Elevated plasma concentrations of apo(a) and its naturally occurring proteolytic fragments are correlated with atherosclerosis. Homology with plasminogen kringles IV and V is thought to underlie the atherogenicity of the protein, because the fragments are competing with plasminogen for fibrin(ogen) binding.

HISCELLANEOUS: Apo(a) is known to be proteolytically cleaved, leading to the formation of the so called mini-Lp(a). Apo(a) fragments accumulate in atherosclerotic lesions, where they may promote thrombogenesis. O-glycosylation may limit the extent of proteolytic fragmentation.

SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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aque). 23; Craniata; Vertebrata; Euteleostomi; 25; Catarrhini; Cercopithecidae; 26; Catarrhini; Cercopithecidae; 27; Catarrhini; Cercopithecidae; 28; Catarrhini; Cercopithecidae; 29; Catarrhini; Cercopithecidae; 29; Catarrhini; Cercopithecidae; 29; Catarrhini; Cercopithecidae; 29; Catarrhini; Cercopithecidae; 20; Catarrhini; Cer	ted) sequence update) annotation update) 21) (Apo(a)) (Lp(a)) (Fragment).	PRT; 1420 AA.	JRCSDIEGTVV 89            JRCSDIEGTVV 4209	TTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTWNYCRNPDADT 60	Score 517; DB 1; Length 4548; Pred. No. 4.1e-47; 0; Mismatches 1; Indels 0; Gaps 0	-	(LOSS OF	CHARGE RELAY SYSTEM. CHARGE RELAY SYSTEM.	ROTEASE.	TYPE IV,	KRINGLE TYPE IV, 27. KRINGLE TYPE IV, 28.	TYPE IV,	TYPE IV,	TYPE IV,	TYPE IV,	TYPE IV,	, <u>,</u>	TYPE IV,	E TYPE IV,	E TYPE IV, E TYPE IV,				

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Pfam; PF00051; kringle; I1.
Pfam; PF00089; trypsin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboratio between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no wall modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce or send an email to license@isb-sib.ch).
                                                                                                                                     SEQUENCE
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PIR; A32869; A32869.
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                                                                                                                                                 DOMAIN
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MEROPS; S01.226; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DISEASE Elevated plasma concentrations of apo(a) and its naturally occurring proteolytic fragments are correlated with atherosclerosis. Homology with plasminogen kringles IV and V is thought to underlie the atherogenicity of the protein, because the fragments are competing with plasminogen for fibrin(ogen) binding. MISCELLANEOUS: Apo(a) is known to be proteolytically cleaved, leading to the formation of the so called mini-tp(a). Apo(a) leading to the formation of the so called mini-tp(a). Apo(a) fragments accumulate in atherosclerotic lesions, where they may promote thrombogenesis. O-glycosylation may limit the extent of proteolytic fragmentation (By similarity).

SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY. SIMILARITY: Contains at least 10 kringle domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FUNCTION: Apo(a) is the main constituent of lipoprotein(a) (Lp(a)). It has serine proteinase activity and is able of autoproteolysis. Inhibits tissue-type plasminogen activator 1. Lp(a) may be a ligand for megalin/Gp 330.
SUBUNIT: Disulfide-linked to apo-B100. Binds to fibronectin and
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PTM: N- and O-glycosylated (By similarity)
61
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                                                                               81;
                                                                                            Similarity
GPWCFTTDPSIRWEYCNLTRCSDTEGTVV
                                       VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMYYCRNPDADT
                         VQQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHQHKRTPENHPNDDLTMNYCRNPDADT
                                                                                                                                                                                                                                                                                                                 kepeat;
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1191
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KRINGLE 2.
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KRINGLE 5.
KRINGLE 6.
KRINGLE 7.
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KRINGLE 10.
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ACTIVE SITE.
MEDLINE-73149248; PubMed=4694729;
Robbins K.C., Bernabe P., Arzadon
                                                                                                                                 "Amino-acid sequence of the cyanogen-bromide fragment from human plasminogen that forms the linkage between the plasmin chains."; Eur. J. Biochem. 58:539-547(1975).
                                                                                                                                                                                                                          SEQUENCE OF 95-580; 581-626; 657-700 AND 732-810. Softrup-Jensen L., Claeys H., Zajdel M., Petersen T.E., (In) Davidson J.F., Rowan R.M., Samama M.M., Desnoyers Progress in chemical fibrinolysis and thrombolysis, pp.: Raven Press, New York (1978).
                                                                                                                                                                                                                                                                                                    "Structural relationship between 'glutamic acid' and 'lysine' forms of human plasminogen and their interaction with the NH2-terminal activation paptide as studied by affinity chromatography."; Eur. J. Biochem. 50:489-494(1975).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=90202879; PubMed=2318848; Petersen T.E., Martzen M.R., Ichinose A. "Characterization of the gene for human in the fibrinolytic system.";
                                                                                                                                                                                                                                                                                                                                                        MEDLINE=75093329; Pu
Wiman B., Wallen P.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=85023311; PubMed=6148961;
Malinowski D.P., Sadler J.E., Davie E.W.;
"Characterization of a complementary deox
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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FEBS Lett. 213:254-260
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emistry 23:4243-4250(1984).
                                                       structure of the B-chain of Biochem. 76:129-137(1977).
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                                                                                                                                                                        Wallen P.;
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      Summaria L.;
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Biochemistry
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"A recombinant boy."
                                                                                                                                                                                                                                                                                                                     CHARACTERIZATION OF ANGIOSTATIN, AND PARTIAL SEQUENCE. MEDLINE=95042728; PubMed=7525077; O'Reilly M.S., Holmgren L., Shing Y., Chen C., Rosenthal R. Moses M., Lane W.S., Cao Y., Sage E.H., Folkman J.; "Angiostatin: a novel angiogenesis inhibitor that mediates suppression of metastases by a Lewis lung carcinoma."; Cell 79:315-328(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=88185329; PubMed=3356193;
Marti T., Schaller J., Rickli E.E., Schmid K., Kame Gerwig G.J., van Halbeek H., Vilegenthart J.F.;
"The N- and O-linked carbohydrate chains of human, plasminogen. Species specificity in relation to signification patterns.";
Eur. J. Biochem. 173:57-63(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "The primary structure of of human plasmin: light () J. Biol. Chem. 248:1631-11
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Trexler M., Vali Z., Patthy L.;
"Structure of the omega-aminocarboxylic plasminogen. Arginine 70 and aspartic ac binding of ligand by kringle 4.";
J. Biol. Chem. 257:7401-7406(1982).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=69234739; PubMed=4240117;
Groskopf W.R., Summaria L., Robbi
                                     MEDLINE=92031502; PubMed=1657148; Mulichak A.M., Tulinsky A., Ravichar "Crystal and molecular structure of refined at 1.9-A resolution.";
                                                                                                                                                                               "A recombinant human angiostatin and metastatic cancer.";
                                                                                                                                                                                                                                                             CHARACTERIZATION OF ANGIOSTATIN. MEDLINE=97238710; PubMed=9102221;
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Pirie-Shepherd S.R.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    plasminogen 2.";
ol. Chem. 272:7408-7411(1997).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R., Summaria L., Robbins K.C.;
the active center of human plasmin.
a peptide containing the active cent
em. 244:3590-3597(1969).
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R., Stevens R.D.,
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STRUCTURE BY NMR OF 96-184.
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MEDLINE=94237157; PubMed=8181475;
Rejante M.R., Llinas M.;
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MEDLINE=96180681; PubMed=8611560;

Mathews I.I., Vanderhoff-Hanaver P., Castellino F.J., Tulinsky "Crystal structures of the recombinant kringle 1 domain of huma plasminogen in complexes with the ligands epsilon-aminocaproic and trans-4-(aminomethyl)cyclohexane-1-carboxylic Acid.";

Biochemistry 35:2567-2576(1996).
                                                                                                                                                                                                                                                                                                           STRUCTURE BY NMR OF 183-354.
MEDLINE=96194156; PubMed=8652577;
Soehndel S., Hu C.-K., Marti D., P.
Rickli B.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Wu T.-P., Padmanabhan K., Tulinaky A., Mulichak A.M
"The refined structure of the epsilon-aminocaproic
human plasminogen kringle 4.";
Biochemistry 30:10589-10594(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           X-RAY CRYSTALLOGRAPHY (2.25 ANGSTROMS)
MEDLINE=92031503; PubMed=1657149;
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MEDLINE=90219023; PubMed=2157850;
Atkinson R.A., Williams R.J.P.;
                                                                                                                                                                                                                                                           "Recombinant gene expression and 1H NMR characteristics of the kringle (2 + 3) supermodule: spectroscopic/functional individuality of plasminogen kringle domains."; Biochemistry 35:2357-2364(1996).
                                                                                                                                                                                                                                                                                                                                                                        "Solution structure of the epsilon-aminohexanoic human plasminogen kringle 1."; Eur. J. Biochem. 221:939-949(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Stec
                                                                                                                                                                       "Solution structure of the kringle 1H nuclear magnetic resonance spect J. Mol. Biol. 212:541-552(1990).
                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE:94237158; PubMed=8181476; Rejante M.R., Llinas M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                        STRUCTURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        kringle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5 domain of human plasminogen.";
Biochemistry 37:3258-3271(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Castellino F.J.;
"Structure and ligand binding
5 domain of human plasminogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=98198034; PubMed=9521645; Chang Y., Mochalkin I., McCance S
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                                                                                                                                                 VARIANTS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Stec B., Yamano A., Whitlow M., Teeter M.M.; "Structure of human plasminggen kringle 4 at 1.68 a possible structural role of disordered residues. Leta Crystallogr. D 53:169-178(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                               J. Biochem.
 434
                       61
                                                                                                             Similarity
                       GPWCFTTDPSIRWEYCNLTRCSDTEGTVV
                                                            GPWCFTTDPSVRWEYCNLKKCSGTEASVV
                                                                                                                                                  PHE-374
                                                                                                                                                                                                                                                                                                                                                                                                                                      BY NMR OF
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                                                ANGSTROMS)
                                                                                                Score 444; DE
Pred. No. 4.3e
7; Mismatches
                                                                                                                                                                                    ingle 4 domain spectroscopy a
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e geometry.";
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human
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PLMN_MACMU
InterPro; IPR001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR003014; pan.
InterPro; IPR003019; pan app.
InterPro; IPR003609; pan app.
InterPro; IPR003566; Prothrombin.
InterPro; IPR001254; Ser protease_Try.
IPR001254; kringle; 5.
IPR001254; kringle; 5.
IPR001254; pan; 1.
IPR001255; pr001254; pan; 1.
IPRINTS; PR001212; CHYMOTRYPSIN.
IPRINTS; PR001212; CHYMOTRYPSIN.
IPRINTS; PR001213; KRINGLE.
IPRINTS; PR001305; KRINGLE; 5.
IPRODOM; PR001505; PROTHROMBIN.
IPRODOM; PR01505; PR01505; PR01505; IPROTHROMBIN.
IPRODOM; PR01505; PR01505; IPROTHROMBIN.
IPRODOM; PR01505; PR01505; IPROTHROMBIN.
IPRODOM; PR01505; PR01505; IPROTHROMBIN.
IPRODOM; PR0
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P12545;
01-OCT-1989
01-OCT-1989
28-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; J04697;
PIR; B32869; E
HSSP; P00747;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Synthesis.";
J. Biol. Chem. 264:5957-5965(1989).
J. BIOL. CLOTS AND ACTS AND ACTS AND PROTEOLYTIC FACTOR IN A VARIETY OF OTHER PROCESSES INCLUDING EMBRYONIC DEVELOPMENT, TISSUE REMODELING, TUMOR INVASION,
AND INFLAMMATION; IN OVULATION IT WEAKENS THE WALLS OF THE GRAAFIAN FOLLICLE. IT ACTIVATES THE UROXINASE-TYPE PLASMINOGEN ACTIVATOR, COLLAGENASES AND SEVERAL COMPLEMENT ZYMOGENS, SUCH AS C1 AND C5. IT CLEAVES FIBRIN, FIBRONECTIN, THROMBOSPONDIN,
LAMININ AND VON WILLEBRAND FACTOR.

LAMININ AND VON WILLEBRAND FACTOR.

-I- CATALYTIC ACTIVITY: Preferential cleavage: Lys-[-Xaa > Arg-[-Xaa; higher selectivity than trypsin. Converts fibrin into soluble
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PLG.
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NCBI_TaxID=9544;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Macaca mulatta (Rhesus macaque).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plasminogen
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ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN
ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO
FIBRIN. ACTIVATED WITH CATALYTIC AMOUNTS OF STREPTOKINASE.
MISCELLANBOUS: PLASMIN IS INACTIVATED BY ALPHA-2-ANTIPLASMIN
IMMEDIATELY AFTER DISSOCIATION FROM THE CLOT.
MISCELLANBOUS: IN THE PRESENCE OF THE INHIBITOR, THE ACTIVATION
INVOLVES ONLY CLEAVAGE AFTER ARG-580, RESULTIVE IN 2 CHAINS HELD
TOGETHER BY 2 DISULFIDE BONDS. WITHOUT THE INHIBITOR, THE
ACTIVATION INVOLVES ALSO REMOVAL OF THE ACTIVATION PEPTIDE.
SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY.
SIMILARITY: Contains 5 kringle domains.
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(Rel. 12, Last sequence update)
(Rel. 41, Last annotation update)
precursor (EC 3.4.21.7).
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Sequence, evolution, and sites
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                                                                                                                                                                                    Similarity
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PS00135;
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PS50070;
PS50240;
                     GPWCFTTDPSIRWEYCNLTRCSDTEGTV
GPWCFTTDPSVRWEYCNLKKCSGTEGSV
                                                                                VQECYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHWHEKTPENFPNAGLTMNYCRNPDADK 433
                                                                                                      VRQCYHGNGQSYRGTESTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADT
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KRAINGLE 2; 5.

TRYPSIN DOM; 1.

TRYPSIN HIS; 1.

TRYPSIN SER; 1.

protease; Plasma; Glycoprotein; Fibrinolysis; protease; Plasma; Kringle; Zymogen; Repeat;
                                                                                                                                                                                                                                                   90255 MW;
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79.5%;
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FIBRIN.

BY SIMILARITY.

BY SIMILARIT
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CHARGE RELAY SYSTEM.
CHARGE RELAY SYSTEM.
CHARGE RELAY SYSTEM.
OMEGA-AMINOCARBOXYLIC A
OMEGA-AMINOCARBOXYLIC A
OMEGA-AMINOCARBOXYLIC A
OMEGA-AMINOCARBOXYLIC A
OMEGA-AMINOCARBOXYLIC A
OMEGA-AMINOCARBOXYLIC A
                                                                                                                                                                                      Score 433; DB 1;
Pred. No. 6.5e-39;
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KRINGLE
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                                                                                                                                                                  Mismatches
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LATION PEPTIDE.
SMIN SHORT FORM OF CHAIN A
WIN LIGHT CHAIN B.
TLE 1.
TLE 2.
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RESULT 5
PLMN\_BOVIN
ID PLMN\_BOVIN

STANDARD;

PRT;

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MEDILING-BEHES 229; Pubmede 3356193;

MARTÍ T., Schaller J., Rickli E.E., Schmid K., Kamerling J.P.,

MARTÍ T., Schaller J., Rickli E.E., Schmid K., Kamerling J.P.,

MARTÍ T., Schaller J., Rickli E.E., Schmid K., Kamerling J.P.,

MARTÍ T., Schaller J., Rickli E.E., Schmid K., Kamerling J.P.,

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MARTÍ T., Schaller J., Rickli E.E., Schmid K., Kamerling J.P.,

MARTÍ T., MARTÍ T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P06868; Q28162;
01-JAN-1988 (Rel. (
01-NOV-1997 (Rel. 3
28-FEB-2003 (Rel. 4
EMBL;
                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrictuse by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fine entities requires a license agreement (See http://www.isb-siborsend an email to license@isb-sib.ch).
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"Complete amino acid sequence of bovine plasminogen. Comparison
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Berglund L., Andersen M.D., Petersen T.E.; "Cloning and characterization of the bovine plasminogen cDNA."; Int. Dairy J. 5:593-603(1995).
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Mammalia; Euthería; Ce
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bos taurus (Bovine).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Plasminogen
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 706-812 FROM N.A. MEDLINE=85023311; PubMed=6148961;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=85203906; PubMed=3846532;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRODUCTS

ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN
ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO
FIBRIN. CANNOT BE ACTIVATED WITH STREPTOKINASE.

PTM: N-LINKED GLYCANS CONSTAIN N-ACETYLLACTOSAMINE AND SIALIC ACID.
O-LINKED GLYCANS CONSIST OF GAL-GALMAC DISACCHARIDE WITH IS
MODIFIED WITH UP TO 2 SIALIC ACID RESIDUES (MICROHETEROGENEITY).
MISCELLANBOUS: PLASMIN IS INACTIVATED BY ALPHA-2-ANTIPLASMIN
INMEDIATELY AFTER DISSOCIATION FROM THE CLOT.
SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY
SIMILARITY: Contains 5 kringle domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATALYTIC ACTIVITY: Preferential cleavage: Lys-|-Xaa > Arg-|-Xaa; higher selectivity than trypsin. Converts fibrin into soluble
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTIVATOR, COLLAGENASES AND SEVERA
AS C1 AND C5. IT CLEAVES FIBRIN, F
LAMININ AND VON WILLEBRAND FACTOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      J. Biochem. 149:267-278(1985)
    X79402; CAA55939.1;
K02935; AAA30714.1;
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(Rel. 35, Last sequence update)
(Rel. 41, Last annotation update)
precursor (EC 3.4.21.7).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            plasminogen. Comparison with
                                                                                                                                                                               . Usage by and for commercial http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pecora; Bovoidea;
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Best Local S
Matches 66
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InterPro; IPR000001; Kringle.
InterPro; IPR003001; pAN.
InterPro; IPR003609; Pan_app.
InterPro; IPR003966; ProLhrombin.
InterPro; IPR001254; Ser_protease_Try.
Pfam; PF00051; kringle; 5.
Pfam; PF00081; PAN; 1.
            PLMN PIG
P06867;
01-JAN-1988
01-FEB-1991
.28-FEB-2003
Plasminogen
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ACT_SITE
ACT_SITE
CONFLICT
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swart; Sw00130; KR; 5.
swart; Sw00473; PAN AP; 1.
swart; Sw000473; PAN AP; 1.
swart; Sw00020; Tryp_SPc; 1.
swart; Sw00020; KRINGLE 1; 5.
pROSITE; pS50070; KRINGLE 2; 5.
pROSITE; pS50070; KRINGLE 2; 5.
pROSITE; pS50134; TRYPSIN_DOM; 1.
pROSITE; pS00134; TRYPSIN_HIS; 1.
pROSITE; pS00135; TRYPSIN_HIS; 1.
pROSITE; pS00135; TRYPSIN_EER; 1.
Hydrolase; Serine protease; Plasma; Glycoprotein; Fibrinolysis;
Tissue remodeling; Blood coagulation; Kringle; Zymogen; Repeat;
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CHAIN
DOMAIN
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DOMAIN
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SIGNAL
CHAIN
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PRINTS; PR007722; CHYMOTRYPSIN.
PRINTS; PR00018; KRINGLE.
PRINTS; PR01505; PROTHROMBIN.
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DOMAIN
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                                                                                                                                                                                                                                                                                                      382
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                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                      QDCYHGNGQSYRGTSSTTITGRKCQSWSSMTPHRHLKTPENYPNAGLTMNYCRNPDADKS
                                                                                                                                                                                                                                                                                                                           ROCYHGNGOSYRGTFSTTVTGRTCQSWSSMTPHRHORTPENYPNDGLTMNYCRNPDADTG
                                                                                                                                                                                                                                             PWCFTTDPSIRWEYCNLTRCSDT 84
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667
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744
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584
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282
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384
                (Rel. 10, Created)
(Rel. 17, Last sequence update)
(Rel. 41, Last annotation updat
(EC 3.4.21.7).
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                                                                                                                     STANDARD;
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812
583
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3159
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                                                                                                                                                                                                                                                                                                                                                                                                       79.3%;
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/FTId=CAR 000014.
O-LINKED (GALNAC...)
/FTId=CAR 000015.
/FTId=CAR 000015.
CHARGE RELAY SYSTEM.
                                                                                                                                                                                                                                                                                                                                                                                  Score 415; DB 1; L
Pred. No. 5.5e-37;
Prematches 9;
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PLASMIN LIGHT
KRINGLE 1.
KRINGLE 2.
KRINGLE 3.
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PLASMIN HEAV
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KRINGLE 5.
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                                                                                                                       PRT;
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PRINTS; PR01505; PROTHROMBIN.
ProDom; PD000395; Kringle; 5.
SMART; SM00130; KR; 5.
SMART; SM0020; TRYP_SPC; 1.
SMART; SM0020; TRYP_SPC; 1.
PROSITE; PS00021; KRINGLE 1; 5.
PROSITE; PS00021; KRINGLE 2; 5.
PROSITE; PS50240; TRYPSIN_DOM; 1.
PROSITE; PS000134; TRYPSIN_HIS; FALSE_NEG.
                                                                                                                                                                                                                                                        InterPro; IPR001254; Ser proteau
Pfam; PP00051; kringle; 5.
Pfam; PP00051; kringle; 1.
Pfam; PP00089; trypsin; 1.
PRINTS; PR00722; CHYMOTRYPSIN.
PRINTS; PR00018; KRINGLE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       plasminogen. Species specificity in relation to sialylation and fucosylation patterns.";
Eur. J. Biochem. 173:57-63(1988).

-i. FUNCTION: PLASMIN DISSOLVES THE FIBRIN OF BLOOD CLOTS AND ACTS AS A PROTEOLYTIC FACTOR IN A VARIETY OF OTHER PROCESSES INCLUDING EMBRYONIC DEVELOPMENT, TISSUE REMODELING, TUMOR INVASION, AND INFLAMMATION; IN OVULATION IT WEAKENS THE WALLS OF THE GRAAFIAN FOLLICLE. IT ACTIVATES THE UROXINASE-TYPE PLASMINOGEN ACTIVATOR, COLLAGENASES AND SEVERAL COMPLEMENT ZYMOGENS, SUCH AS C1 AND C5. IT CLEAVES FIBRIN, FIBRONECTIN, THROMBOSPONDIN, LAMININ AND VON WILLEBRAND FACTOR.

-i. CATALYTIC ACTIVITY: Preferential cleavage: Lys-|-xaa > Arg-|-xaa; higher selectivity than trypsin. Converts fibrin into soluble
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sus scrofa
Eukaryota;
Mammalia; E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYDRATE-LINKAGE SITES.

MEDLINE=88185329; PubMed=3356193;

MARTITINE=88185329; PubMed=356193;

MARTITINE=88185329; PubMed=356193;

MEDLINE=88185329; PubMed=356193;

MEDLINE=88185329;

MEDLINE=881852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=85203907; PubMed=3846533;
Marti T., Schaller J., Rickli E.E.;
"Determination of the complete amino-acid sequence miniplasminogen.";
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Schaller J., Marti T., Roesselet S.J., Kaempfer U., Rickli E.B. "Amino acid sequence of the heavy chain of porcine plasmin. Cor of the carbohydrate attachment sites with the human and bovine species.";
Fibrinolysis 1:91-102(1987).
                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR003014; pAN.
InterPro; IPR003609; Pan_app.
InterPro; IPR003966; Prothrombin.
InterPro; IPR003254; Ser_protease_Try.
Pfam; PF00051; kringle; 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GlycoSuiteDB; P06867;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IMMEDIATELY AFTER DISSOCIATION FROM THE SIMILARITY: BELONGS TO PEPTIDASE FAMILY SIMILARITY: Contains 5 kringle domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRODUCTS.

ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN
ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN
ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO
ACTIVATORS WITH STREPTOKINASE.

PTW: N-LINKED GLYCAN CONTAINS N-ACETYLLACTOSAMINE, SIALIC ACID
IS CORE FUCCOSYLATED. O-LINKED GLYCANS CONSIST OF GAL-GALMAC
DISACCHARIDE WITH IS MODIFIED WITH UP TO 2 SIALIC ACID RESIDUES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (MICROHETEROGENEITY).
MISCELLANEOUS: PLASMIN IS INACTIVATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S03733; PLPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            J. Biochem. 149:279-285(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   00747; SHPG.
S01.233; -.
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Cetartiodactyla; Suina; Suidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВХ
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Sus.
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n. Comparison
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Best Local :
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PLMN MOUSE STANDARD;
P20918; Q8CIS2; Q91WJ5;
01-FEB-1991 (Rel. 17, Cre
15-SEP-2003 (Rel. 42, Las
15-SEP-2003 (Rel. 42, Las
                                                                                                                                                                                                                                                                                               Brathwaite M., I
Nagaraja R.;
"Genomic sequeno
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ACT_SITE
ACT_SITE
ACT_SITE
Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
Strausberg R.L., Collins F.S., Wagner L., Shemmen C.M., Schuler G.D.,
Altschmid S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsich F.,
Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PLG.
                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.

MEDLINE=91184812; PubMed=2081600;

Begen S.J., Bell: S.M., Schaefer L.A., Elliott R.W.;

Begen S.J., Bell: S.M., Schaefer L.A., Elliott R.W.;

"Characterization of the cDNA coding for mouse plasminogen localization of the gene to mouse chromosome 17.";

Genomics 8:49-61(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHAIN
                                                                                                                                                                                         PubMed=12477932;
                                                                                                                                                                                                                                                                                                                                                            STRAIN=129/Sv;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plasminogen
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                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
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Last annotation update)
(EC 3.4.21.7) [Contains: Angiostatin]
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KRINGLE 3.

KRINGLE 4.

KRINGLE 4.

KRINGLE 5.

CHARGE RELAY SYSTEM.

CHARGE RELAY SYSTEM.

CHARGE RELAY SYSTEM.

N-LINKED (GLCNAC. . .).
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Pred. No. 1.7e-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /FTId=CAR 000019.
O-LINKED (GALNAC. . .).
/FTId=CAR 000020.
; F04EA06E74BCD58E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pulation; Kringle; Zymogen; PLASMIN HEAVY CHAIN A. PLASMIN LIGHT CHAIN B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SERINE PROTEASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Craniata; Vertebrata; l
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                      ¥.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
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n; Kringle; Zymogen; Repeat.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          812
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                                                                                                                                                                                                                                                                                                                                           Schlessinger
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EMBL; J04766; AAA50168.1; -. EMBL; AF481053; AAW22156.1; -. EMBL; BC014773; AAH14773.1; -. EMBL; AY134430; AAW15805.1; -. PIR; A38514; PLMS.
HSSP; P00747; IPMK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A PROTEOLYTIC PALAMIN DISSOLVES THE FIBRIN OF BLOOD CLOTS AND ACTS AS A PROTEOLYTIC PACTOR IN A VARIETY OF OTHER PROCESSES INCLUDING EMBRYONIC DEVELOPMENT, TISSUE REMODELING, TUMOR INVASION, AND INFLAMMATION; IN OVULATION IT WEAKENS THE WALLS OF THE GRAAFIAN FOLLICLE. IT ACTIVATES THE UROKINASE-TYPE PLASMINOGEN ACTIVATOR, COLLAGENASES AND SEVERAL COMPLEMENT ZYMOGENS, SUCH AS C1 AND C5. IT CLEAVES FIBRIN, FIBRONECTIN, THROMBOSPONDIN, LAMININ AND VON WILLEBRAND FACTOR.

-IP FUNCTION: ANGIOSTATIN IS AN ANGIOGENESIS INHIBITOR THAT BLOCKS NEOVASCULARIZATION AND GROWTH OF EXPERIMENTAL PRIMARY AND METASTATIC TWORRS IN VIVO.

-IP CATALYTIC ACTIVITY: Preferential cleavage: Lys-|-Xaa > Arg-|-Xaa; higher selectivity than trypsin. Converts fibrin into soluble
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Villaion D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A., Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A., Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G., Blakeeley R.W., Touchman J.W., Green E.D., Dickson M.C., Rodriguez A.C., Grimwood J.W., Schmutz J., Myers R.M., Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E., Jones S.J.M., Marra M.A., "Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CHARACTERIZATION OF ANGIOSTATIN, AND PARTIAL SEQUENCE. MEDLINE=95042728; PubMed=7525077; O'Reilly M.S., Kolmgren L., Shing Y., Chen C., Rosenthal R. Moses M., Lane W.S., Cao Y., Sage E.H., Folkman J.; Moses M., Lane W.S., Cao Y., Sage E.H., Folkman J.; "Angiostatin: a novel angiogenesis inhibitor that mediates suppression of metastases by a Lewis lung carcinoma."; Cell 79:315-328(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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Parmer R.J., Miles L.A.;
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)PS; S01.23; -.
)PS; S01.23; -.
; MGI:97620; Plg.
GO:0016506; F:apoptosis activator activity; IDA.
GO:0006915; P:apoptosis; IDA.
GO:0006915; P:apoptosis; IDA.
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ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN ACTIVATOR BEING BOUND TO FIBRIN. CANNOT BE ACTIVATED WITH STREPTOKINASE.

MISCELLANBOUS: PLASMIN IS INACTIVATED BY ALPHA-2-ANTIPLASMIN IMBEDIATELY AFTER DISSOCIATION FROM THE CLOTMISCELLANBOUS: IN THE PRESENCE OF THE INHIBITOR, THE ACTIVATION INVOLVES CHAVAGE AFTER ARG-581, RESULTITING IN 2 CHAINS HELD TOGETHER BY 2 DISULFIDE BONDS. WITHOUT THE INHIBITOR, THE ACTIVATION INVOLVES ALSO REMOVAL OF THE ACTIVATION PEPTIDE.

SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY. SIMILARITY: Contains 5 kringle domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gutierrez A., Fowler B.J.,
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Lu X.,
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expression.";
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Query Match
Best Local S
Matches 63
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SMART; SM00020; Tryp SPc; 1.

PROSITE; PS00021; KRINGLE 1; 5.

PROSITE; PS50070; KRINGLE 2; 5.

PROSITE; PS50240; TRYPSIN DOM; 1.

PROSITE; PS00134; TRYPSIN SER; 1.

PROSITE; PS00135; TRYPSIN SER; 1.

Hydrolase; Serine protease; Plasma; Gl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pfam; PF00089; trypsin; 1.
PRINTS; PR00722; CHYMOTRYPSIN.
PRINTS; PR00018; KRINGLE.
PRINTS; PR01505; PROTHROMBIN.
ProDom; PD000395; Kringle; 5.
SMART; SM00130; KR; 5.
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Tissue remo
Signal.
SIGNAL
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InterPro; IPR003966; Prothrombin.
InterPro; IPR001254; Ser_protease_Try.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PF00051; kringle; PF00024; PAN; 1.
  63;
          Similarity
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IPR003014; PAN.
                                             Conservative
                                                                      649 !
90781 MW;
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             76.5%;
 14;
                                            CHARGE RELAY SYSTEM (BY SIN
BY SIMILARITY.
             Score
Pred.
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PLASMIN LIGHT CHAIN
KRINGLE 1.
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PLASMIN HEAVY CHAIN
             400;
No. 2
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E RELAY SYSTEM
E RELAY SYSTEM
E RELAY SYSTEM
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n; Kringle; Zymogen; Repeat;
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             DB 1;
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                        Length 812;
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RESULT 8
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Pfam; PF00
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                                                                                                      EMBL; U33171; AAC48717.1; -. PIR; I46260; I46260. HSSP; P00747; 1PMK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hedgehog
J. Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=96025778; PubMed=7592597;
Lawn R.M., Boonmark N.W., Schwartz K., Lindahl G.E., Wade D.P.,
Byrne C.D., Fong K.J., Meer K., Patthy L.;
"The recurring evolution of lipoprotein(a). Insights from cloning
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28-FEB-2003
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Lawn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa;
Mammalia; Eutheria;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Plasminogen
                                                                                             MEROPS; SO1
                                            nterPro;
                                                          [nterPro;
                                                                     [nterPro;
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ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN
ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO
PIBRIN. CANNOT BE ACTIVATED WITH STREPTOKINASE.
MISCELLANBOUS: PLASMIN IS INACTIVATED BY ALPHA-2-ANTIPLASMIN
IMMEDIATELY AFTER DISSOCIATION FROM THE CLOT.
SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY.
SIMILARITY: Contains 5 kringle domains.
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         ; IPR003966; Prochrombin.
; IPR001254; Ser nrot-
00051: Vri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   apolipoprotein(a).";
Chem. 270:24004-24009(1995)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               europaeus
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(Rel. 35, Last sequence up
(Rel. 41, Last annotation
precursor (EC 3.4.21.7).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Western European hedgehog).
Chordata; Craniata; Vertebrata; Euteleostomi;
Insectivora; Erinaceidae; Erinaceinae; Erinaceus.
         Ser_protease_Try.
le; 5.
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Q01177;
01-APR-1993
01-APR-1993
28-FEB-2003
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DOMAIN
ACT_SITE
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CARBOHYD
SEQUENCE
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CHAIN
CHAIN
DOMAIN
DOMAIN
Kanalas J.J., Makker S.P.;

"Identification of the rat Heymann nephritis autoantigen (GP330) as receptor site for plasminogen.";

J. Biol. Chem. 266:10825-10829(1991).

-i- FUNCTION: PLASMIN DISSOLVES THE FIBRIN OF BLOOD CLOTS AND ACTS A PROTECLYTIC FACTOR IN A VARIETY OF OTHER PROCESSES INCLUDING EMBRYONIC DEVELOPMENT, TISSUE REMODELING, TUMOR INVASION, AND INFLAMMATION, IN OVULATION IT WEAKENS THE WALLS OF THE GRAAFIAN FOLLICLE. IT ACTIVATES THE UROKINASE-TYPE PLASMINOGEN ACTIVATOR, COLLAGENASSES AND SEVERAL COMPLEMENT ZYMCZENS, SUCH AS C1 AND C5. IT CLEAVES FIBRIN, FIBRONECTIN, THROMBOSPONDIN, AS C1 AND C5. IT CLEAVES FIBRIN, FIBRONECTIN, THROMBOSPONDIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
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SIGNAL
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SMART; SM00020; Tryp SPc; 1.

PROSITE; PS00021; KRINGLE 1; 5.

PROSITE; PS50070; KRINGLE 2; 5.

PROSITE; PS50240; TRYPSIN DOM; 1.

PROSITE; PS50240; TRYPSIN HIS; 1.
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PRINTS; PR00018; KRINGLE.
PRINTS; PR01505; PROTHROMBIN.
ProDom; PD000395; Kringle; 5.
SMART; SM00130; KR; 5.
                                                                                                                                        SEQUENCE FROM N.A. TISSUE-Liver;
                                                                                                                                                                                 Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                               Plasminogen
                                                                                                                                                                     NCBI_TaxID=10116;
                                                                                                                                                                                                        Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hydrolase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF00089; trypsin; 1.
                                                                                                                            MEDLINE=91250378; PubMed=1645711;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     issue
                                                                                                                                                                                                                                                                                                                                                436
                                                                                                                                                                                                                                                                                                                                                                                          376
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                                                                                                                                                                                                                                                                                                                                                                                                     1 VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                       61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                         PS00135;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    810
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103
                                                                                                                                                                                                                              (Rel. 25, Created)
(Rel. 25, Last sequence update)
(Rel. 41, Last annotation updat
(EC 3.4.21.7) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
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                                                                                                                                                                                                                                                                                       STANDARD;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protease; Plasma; G;
; Blood coagulation;
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760
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71.8%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                       12;
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KRINGLE 5.
CHARGE RELAY SYSTEM.
CHARGE RELAY SYSTEM.
CHARGE RELAY SYSTEM.
N-LINKED (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Plasma; Glycoprotein; Fibrinolysis;
agulation; Kringle; Zymogen; Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SERINE PROTEASE.
KRINGLE 1.
KRINGLE 2.
KRINGLE 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 392; DB 1;
Pred. No. 1.6e-34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PLASMIN HEAVY CHAIN
PLASMIN LIGHT CHAIN
                                                                                                                                                                                  Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8E75780946017A16 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY.
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                                                                                                                                                                                                                                                                                        169 AA.
                                                                                                                                                                                                                                          update)
                                                                                                                                                                                                                                                                                                                                                                                                                                         12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 810;
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ХВ)
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HGFL_MO
ID HG
AC P2.2
DT 01
DT 15
DT 15
DT HG
DE HG
GN MS
Mu
01-AUG-1992 (Rel. 23, 15-SEP-2003 (Rel. 42, Hepatocyte growth fact stimulatory protein) (MST1 OR HGFL.
                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                               Matches
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SMART; SM00130; KR; 1.
PROSITE; PS00021; KRINGLE 2; 2.
PROSITE; PS50070; KRINGLE 2; 2.
PROSITE; PS50240; TRYPSIN DOM; PARTIAL.
PROSITE; PS00134; TRYPSIN_HIS; PARTIAL.
PROSITE; PS00135; TRYPSIN_SER; PARTIAL.
PROSITE; PS00135; TRYPSIN_SER; PARTIAL.
                                                                                              MOUSE
HGFL MOUSE
P26928;
01-AUG-1992
                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
DISULFID
DISULFID
DISULFID
NON TER
SEQUENCE
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Tissue remo
NON TER
DOMAIN
DOMAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRINTS; PR00018; 1
PRINTS; PR01505; 1
ProDom; PD000395;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; M62832; AAA41884.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEROPS; S01.233;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MISCELLANEOUS: PLASMIN IS INACTIVATED BY ALPHA-2-ANTIPLASMIN IMMEDIATELY AFTER DISSOCIATION FROM THE CLOT. SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LAMININ AND VON WILLEBRAND FACTOR.

CATALYTIC ACTIVITY: Preferential cleavage: Lys-|-Xaa > An higher selectivity than trypsin. Converts fibrin into sol products.

ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN ACTIVATOR BEING BOOD FIBRIN. CANNOT BE ACTIVATED WITH STREPTOKINASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIMILARITY: BELONGS TO PEPTIDASE FAMILY SIMILARITY: Contains 5 kringle domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A40522; A40522.
; P00747; 1PMK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pro; IPR000001; Kringle.
Pro; IPR001966; Prothrombin.
Pro; IPR001254; Ser protease_Try.
PF00051; kringle; 2.
S; PR00018; KRINGLE.
S; PR01505; PROTHROMBIN.
                                                                                                                                                                                                               91
                                                                                                                                                                                                                                               60
                                                                                                                                                                                                                                                                             31
                                                                                                                                                                                                                                                                                                                                             64;
                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                 TGPWCFTTDPSIRWEYCNLTRCSDTEGTV
                                                                                                                                                                                                                                                                             VQECYQGNGKSYRGTSSTTNTGKKCQSWVSMTPHSHSKTPANFPDSGLEMNYCRNPDNDQ 90
                                                                                                                                                                                                                                                                                                RGPWCFTTDPSVRWEYCNLKRCSETGGGV
                                                                                                                                                                                                                                                                                                                                               Conservative
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139
139
169
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                                                                                                                                 STANDARD;
                                                23, Created)
23, Last sequence and 42, Last annotation factor-like parts.
                                                                                                                                                                                                                                                                                                                                                                                                                                          112
112
>169
112
95
                                                                                                                                                                                                                                                                                                                                                                                                             18401 MW;
                                                                                                                                                                                                                                                                                                                                                             72.9%;
71.9%;
                                   (MSP).
                                                sequence update)
annotation update)
ike protein precursor (Macrophage)
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KRINGLE
KRINGLE
BY SIMIL
BY SIMIL
BY SIMIL
                                                                                                                                                                                                                                                                                                                                             Pred. No. 3.9
); Mismatches
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                                                                                                                                 PRT;
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                                                                                                                                                                                                                                                 88
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1.9e-34;
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Y SIMILARITY).
Y SIMILARITY).
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EMBL; M74180; AAA5016
EMBL; M74181; AAA5016
PIR; A40332; A40332.
HSSP; P00747; 1KRN.
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                                                                                                                                                                                                                                                                                                                                                                                                                                            the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed. entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=BALB/c; TISSUE=Liver; MEDLINE=92002017; PubMed=1832957;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN
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STRAIN=BALB/c; TIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIMILARITY: BELONGS TO PEPTIDASE FAMILY SIMILARITY: Contains 4 kringle domains.
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PTM: MAY BE CLEAVED AFTER AA 488,
HELD TOGETHER BY DISULFIDE BONDS,
POLYPEPTIDES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CONSERVED.
TISSUE SPECIFICITY: LIVER. LOWER LEVELS IN LUNG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CHARACTERISTIC
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AAA50167.1; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IS EXPRESSED AT LOW LEVELS DURING LEVEL INCREASES DRAMATICALLY AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PEPTIDASE FAMILY
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ene coding for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            as its content
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     development.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TWO-CHAIN MOLECULE INTO TWO SEPARATE
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L outstation -
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PRINTS; PRO0722; CHYMOTRYPSIN.
PRINTS; PRO0018; KRINGLE.
PRINTS; PRO1505; PROTHROMBIN.
PRODOM; PD000395; Kringle; 4.
SMART; SM00130; KR; 4.
SMART; SM00073; PAN AP; 1.
SMART; SM00073; PAN AP; 1.
SMART; SM00070; Tryp_SPC; 1.
PROSITE; PS00071; KRINGLE_1; 4.
PROSITE; PS50070; KRINGLE_2; 4.
PROSITE; PS500240; TRYPSIN_DOM; 1
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DISULFID
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InterPro; IPR003609; Pan_app.
InterPro; IPR003669; Prothrombin.
InterPro; IPR001254; Ser_protease
                                                                                                                                                                                                                                                                                                                                                                                                                           MBROPS; S01.975; -.
MGD; MGI 96080; M8t1.
MnerPro; IPR001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
                                                                                                                                                                                                                                                                                                                                 PF00051; kringle;
PF00024; PAN; 1.
PF00089; trypsin;
                                                                                                                                                                                      Glycoprotein;
  19
110
110
191
292
379
489
56
60
110
1131
157
    18
716
109
186
268
268
370
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186
186
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KRINGLE 3.

KRINGLE 4.

SERINE PROTEASE-LIKE.

SERINE PROTEASE-LIKE.

BY SIMILARITY.

BY SIMILARITY.

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BY SIMILARITY.
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POTENTIAL.
HEPATOCYTE
PAP.
                                                                                                                      KRINGLE
KRINGLE
                                                                                                                                                                                      homolog; Repeat; Signal.
                                                                                                                                                               GROWTH
                                                                                                                                                               FACTOR-LIKE PROTEIN
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RESULT
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Best Local S
Matches 46
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STANDARY,
HGF HUMAN
STANDARY,
HGF HUMAN
STANDARY,
P14210; Q9BYL9; Q9UDU6;
P14210; Q9BYL9; Q9UDU6;
P14310; Q9BYL9; Q9BYL9;
P14310; Q9BYL9; Q9
TISSUB-Leukocyte;

TISSUB-Leukocyte;

MEDLINE-91025062; PubMed-2145836;

MEDLINE-91025062; PubMed-2145836;

Seki T., Ihara I., Sugimura A., Shimonishi M., Nishizawa Seki T., Hagiya M., Nakamura T., Shimizu S.;

"Isolation and expression of cDNA for different forms of growth factor from human leukocyte.";

growth factor from human leukocyte.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HUMAN
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CARBOHYD
CARBOHYD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=91340155; PubMed=1831432; Seki T., Haglya M., Shimonishi M., Nak "Organization of the human hepatocyte Gene 102:213-219(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hepatocyte growth factor (Hepatopoeitin A).
HGF OR HPTA.
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CONFLICT
                                                                                                                                                                                                                                                                                                        MEDLINE=89392017, PubMed=2528952;
Miyazawa K., Tsubouchi H., Naka D.,
Arakaki N., Nakayama H., Hirono S.,
Gohda E., Daikuhara Y., Kitamura N.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Auxaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                "Molecular cloning and 
prowth factor.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human)
                                                                                                                                                                                        SEQUENCE FROM N.A.
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Primates;
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                                                                                                                                                                                                                                       Commun. 163:967-973 (1989)
                                                                                                                                                                                                                                                                                 sequence analysis
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BY SIM
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Pred. No. 9.6e
L1; Mismatches
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BY SIMILARITY.
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Sakiyama O.,
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STRUCTURE BY NMR OF 31-127.

MEDLINE=98154323; PubMed=9493272;

Zhou H., Mazzulla M.J., Kaufman J.D., Stahl S.J.,

Rubin J.S., Bottaro D.P., Byrd R.A.;

"The solution structure of the N-terminal domain
factor reveals a potential heparin-binding site."

Structure 6:109-116(1998).
                                                                                                                                                                                                    MEDLINE=92331602; PubMede1321034;
Lokker N.A., Mark M.R., Luis B.A., Bennett G.L.
Baker J.B., Godowski P.J.;
"Structure-function analysis of hepatocyte grow
"Structure-function analysis that lack mitogenic high affanity receptor binding.";
EMBO J. 11:2503-2510(1992).
                                                                                                                                                                                                                                                                                                                                                                                                         SIGNAL SEQUENCE CLEAVAGE SITE.

MEDITINE=91207365; PubMed=1826837;

Yoshiyama Y., Arakakai N., Naka D., Takahashi K., Hiron
Nakayama H., Gohda E., Kitamura N., Tsubouchi H., Ishii
Hishida T., Daikuhara Y.;

"Identification of the N-terminal residue of the heavy
native and recombinant human hepatocyte growth factor."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUB=EMBTYONIC fibroblast;
MEDLINE=91334393; PubMed=1831266;
Weidner K.M., Arakaki N., Hartmann G.,
Rieder H., Fonatsch C., Tsubouchi H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nakamura T., Nishizawa T., Hagiya M., Sugimura A., Tashiro K., Shimizu S.; "Molecular cloning and expression of Pature 342:440-443(1989).
                                                                                                                                                                                                                                                                                                                   "Hepatocyte growth factor on the alpha chain.";
                                                                                                                                                                                                                                                                                                                                       Shimizu N., Hara H.,
Nakamura T., Shimizu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Miyazawa K., Kitamura A., Kitamura N.; "Structural organization and the transcription initiation site human hepatocyte growth factor gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 249-695
MEDLINE=91369928; Po
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Proc. Natl. Acad.
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MEDLINE=90066676;
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SEQUENCE FROM
                                                                                         X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS)
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H., Sogabe T., Sa
mizu S.;
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Hishida T., Daikuhara Y.,
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WIM, 142409;

RIM: 1,12409;

GO; GO:0008083; F:growth factor activity; NAS.

GO; GO:0007067; F:mitcesis; NAS.

R Interpro; IPR001314; Chymotrypsin.

R Interpro; IPR003014; RAN.

R Interpro; IPR003014; PAN.

R Interpro; IPR003014; PAN.

R Interpro; IPR00350; Pan_app.

R Interpro; IPR001254; Ser protease Try.

Pfam; PF00051; kringle; 4.

Pfam; PF00051; kringle; 4.

Pfam; PF00051; kringle; 4.

PRINTS; PR00018; trypsin; 1.

DR PRINTS; PR00018; trynsin; 1.

DR PRINTS; PR00018; trynsin; 1.

DR PRODOM; PD000395; tringle; 4.

DR SMART; SM00130; KR; 4.

DR SMART; SM00130; KR; 4.

DR SMART; SM00130; Tryp_SPc; 1.

DR SMART; SM00020; Tryp_SPc; 1.

DR PROSITE; PS00021; KRINGLE_1; 4.
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SUBUNT: DIMER OF AN ALPHA CHAIN AND A
DISULFIDE BOND.
SIMILARITY: BELONGS TO PEPTIDASE FAMILY
SIMILARITY: Contains 4 kringle domains.
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D90329 BAA14348.1;
D90331 BAA14348.1;
D90331 BAA14348.1;
D90331 BAA14348.1;
D90333 BAA14348.1;
D90333 BAA14348.1;
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D90322 BAA14348.

D90323 BAA14348.

D90324 BAA14348.

D90324 BAA14348.

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D90325 BAA14348.

D90326 BAA14348.
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HGF MOUSE STANDARD; PRT; 728 AA.

AC Q08648; Q61662; Q64007;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
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      TISSUE-Liver;

MEDLINE=94060105; PubMed=8241272;

Liu Y., Michalopoulos G.K., Zarnegar R.;

Liu Y., Michalopoulos G.K., Zarnegar R.;

Molecular cloning and characterization of cDNA encoding mous hepatocyte growth factor.";

Biochim. Biophys. Acta 1216:299-303 (1993).

-!- FUNCTION: HGF IS A POTENT MITOGEN FOR MATURE PARENCHYMAL-

-!- FUNCTION: HGF IS A POTENT MITOGEN FOR MATURE FACTOR, AN GROWTH FACTOR FOR A BROAD SPECTRUM OF TISSUES AND CELL TY HAS NO DETECTABLE PROTEASE ACTIVITY.
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E; PS5040; TRYPSIN_DOM; 1.
factor; Kringle; Glycoprotein;
3D-structure; Polymorphism; P;
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9; Mismatches 30
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Pyrrolidone carboxylic acio
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Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                          PRINTS; PRO0722; CHYMOTRYPSIN.
PRINTS; PRO0018; KRINGLE.
PRODOM; PD000395; Kringle; 4.
SMART; SM00130; KR; 4.
SMART; SM00020; Tryp SPc; 1.
SMART; SM00020; Tryp SPc; 1.
PROSITE; PS00021; KRINGLE 1; 4.
PROSITE; PS50070; KRINGLE 2; 4.
PROSITE; PS50240; TRYPSIN DOM; 1.
GROWth factor; Kringle; Glycoprotein; Se
                                                                                                                                                                                                                                                                                                                                                                                                                                  MGD; MGI:96079; Hgf.
InterPro; IPR001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR003014; PAN.
InterPro; IPR003609; Pan app.
InterPro; IPR001254; Ser_protease_Try.
Pfam; PF00051; kringle; 4.
Pfam; PF00024; PAN; 1.
                              CONFLICT
CONFLICT
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SEQUENCE
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DISULFID
CARBOHYD
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DISULFID
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EMBL; D10213; BAA01065.1; -.
EMBL; S71816; AAB31855.1; -.
EMBL; X72307; CAA51054.1; ALT_INIT.
PIR; X72307; A60185.
                                                                                                                                                                                                                                                                  CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                     MOD_RES
                                                                                                                                                                                                                                                                                          Signal; Alternative SIGNAL 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY -!- SIMILARITY: Contains 4 kringle domains.
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ALTERNATIVE PRODUC
Event=Alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Name=Short;
                                                                                                                                                                                                                                                                                                                                                                                                                         PF00089;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P14210;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IsoId=Q08048-1; Sequence=Displayed
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2; CHYMOTRYPSIN.
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33
                                                                                                                                                                                                                                                                                                   splicing;
50.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence=VSP_005408;
GS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY.
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                                W.
                                                                                                                                                                                       PAP.
KRINGLE
KRINGLE
KRINGLE
KRINGLE
                                                                          Missing (i
                                                                                                                                                                                                                                                                oprotein; Serine protease homolog; Repeat; Pyrrolidone carboxylic acid.

BY SIMILARITY.

HEPATOCYTE GROWTH FACTOR ALPHA CHAIN.

HEPATOCYTE GROWTH FACTOR BETA CHAIN.
Score 263; DB 1;
Pred. No. 1e-20;
                                          N -> K (IN REF. 2).
V -> L (IN REF. 2).
R -> H (IN REF. 3).
                                                                                              N-LINKED (GLCNAC...)
N-LINKED (GLCNAC...)
N-LINKED (GLCNAC...)
N-LINKED (GLCNAC...)
                                                                                                                                          SERINE PROTEASE-LIKE.
BY SIMILARITY.
BY SIMILARITY.
INTERCHAIN (BY SIMILARITY).
                                                                                                                                                                                                                                              PYRROLIDONE CARBOXYLIC ACID (BY SIMILARITY).
                                A0381FC497534328
                                                                                    (in isoform Short)
                                                                          005408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   There are no rest
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         Length 728,
                                CRC64;
                                                                                                          (POTENTIAL)
(POTENTIAL)
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                                                                                                (POTENTIAL)
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RESULT 13
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                                                                                                                                                                                                                                                                                                                                   Okajima A., Miyazawa K., Kitamura N.;

"Primary structure of rat hepatocyte growth factor and induction of its mRNA during liver regeneration following hepatic injury.";

Bur. J. Biochem. 193:375-381(1990).

-i- FUNCTION: HGF IS A POTENT MITOCEN FOR MATURE PARENCHYMAL.

HEPATOCYTE CELLS, SEEMS TO BE AN HEPATOTROPHIC FACTOR, AND ACTS AS GROWTH FACTOR FOR A BROAD SPECTRUM OF TISSUES AND CELL TYPES.

IT HAS NO DETECTABLE PROTEASE ACTIVITY.

-I- SUBUNIT: DIMER OF AN ALPHA CHAIN AND A BETA CHAIN LINKED BY A DISULTIDE BOND.

-I- SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY.

-I- SIMILARITY: Contains 4 kringle domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HGF RAT STANDARD; PRT; 728 AA. P17945; (Rel. 16, Created) 01-NOV-1990 (Rel. 16, Last sequence update) 28-FEB-2003 (Rel. 41, Last annotation update) Hepatocyte growth factor precursor (Scatter fiftepatopoeitin A).
                                                                                                                                           EMBL; D90102; BAA14133.1; -.
EMBL; X54400; CAA38266.1; -.
PIR; A35644; A35644.
HSSP; P14210; 1BHT.
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STRAIN-Wistar; TISSUE-Liver;
MEDLINE-90222197; PubMed=2139229;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Toshiro K., Hagiya M., N
Shimizu S., Nakamura T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Deduced primary structure of rat hepatocyte growth expression of the mRNA in rat tissues."; Proc. Natl. Acad. Sci. U.S.A. 87:3200-3204(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=10116;
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InterPro; IPR001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR003014; Pan.
InterPro; IPR00309; Pan. app.
InterPro; IPR001254; Ser\_protease\_Try.
Pfam; PF00051; kringle; 4.

MEROPS;

S01.978; -

Pfam; PF00024; PAN; 1. Pfam; PF00089; trypsin; 1.

CHYMOTRYPSIN

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Matches 41
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PRODOM; PRO00395; Kringle; 4.
SMART; SM00130; KR; 4.
SMART; SM00473; PAN AP; 1.
SMART; SM00020; TryP SPc; 1.
PROSITE; PS00021; KRINGLE 1; 4.
PROSITE; PS50070; KRINGLE 2; 4.
PROSITE; PS50240; TRYPSIN DOM; 1.
PROSITE; PS50240; TRYPSIN DOM; 1.
SGGNAL PYRTOIIdone carboxylic acid.
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CHAIN
MOD_RES
                                                                                                                                                                  Han S., Stuart L.A., Friezner Degen S.J.;
"Characterization of the DNF15S2 locus on human chromosome 3:
identification of a gene coding for four kringle domains with
homology to hepatocyte growth factor.";
Biochemistry 30:9768-9780(1991).
                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HGFL_HUMAN STANDARD;
P26927; Q13350; Q14870;
P26927; Q13350; Q14870;
01-AUG-1992 (Rel. 23, Last sequence update)
01-AUG-1992 (Rel. 23, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Hepatocyte growth factor-like protein precursor (Mastinulatory protein) (MSP) (Macrophage stimulating
MEDLINE=93340141; PubMed=8393443;
Yoshimura T., Yuhki N., Wang M.H., Skeel A.,
"Cloning, sequencing, and expression of humar
procein (MSP, MST1) confirms MSP as a member
                                                                                                                                                                                                                                                                                                                                                                                                                                                           MST1 OR HGFL.
Homo sapiens (Human)
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                                                                                              TISSUE=Liver;
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                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM
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Primates;
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INTERCHAIN (BY SIMILARITY).

INTERCHAIN (BCONAC...) (POTE

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N-LINKED (GLONAC...)
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KRINGLE
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SERINE PI
BY SIMIL
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HEPATOCYTE GROWTH FACTOR BETA CHAIN.

HEPATOCYTE GROWTH FACTOR BETA CHAIN.

EYRROLLDONE CARBOXYLIC ACID

(BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 263;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-LINKED (GLCNAC. . .)
N-LINKED (GLCNAC. . .)
N-LINKED (GLCNAC. . .)
N-LINKED (GLCNAC. . .)
3E0BF1F96ADCEDFF CRC6
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
  Skeel A., Leonard E.J.; n of human macrophage stimulating a member of the family of kringle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROTEASE-LIKE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Serine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1e-20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protease homolog; Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 728;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (Macrophage ng protein)
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    of kringle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
       Interpro; IPR00360; Pan app.
Interpro; IPR00396; Prothrombin.
Interpro; IPR00396; Prothrombin.
Interpro; IPR001254; Ser_protease_Try.
Pfam; PF00051; kringle; 4.

Pfam; PF00089; kringle; 1.

Pfam; PF00089; trypsin; 1.

PFINTS; PR00018; KRINGLE.

PRINTS; PR010518; KRINGLE;
PRINTS; PR010518; KRINGLE;
PRINTS; PR00018; KRINGLE; 4.

SMART; SM000130; KR; 4.

SMART; SM00130; KR; 4.

SMART; SM00473; PAN AP; 1.

PROSITE; PS00071; KRINGLE 1; 4.

PROSITE; PS00071; KRINGLE 2; 4.

PROSITE; PS00070; KRINGLE 2; 4.

PROSITE; PS00070; KRINGLE 3; 4.
                           DISULFID
DIS
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DISULFID
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InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEROPS; S01.975; -.
Genew; HGNC:7380; MST1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Polymorphism
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CONSERVED.
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IPR003609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPR001314; Chymotrypsin. IPR000001; Kringle.
       PAN.
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KRINGLE 1.
KRINGLE 2.
KRINGLE 3.
KRINGLE 4.
SERINE PROTEASE-LIKE.
BY SIMILARITY.

POTENTIAL. HEPATOCYTE

GROWTH

FACTOR-LIKE PROTEIN

protease homolog; Repeat; Signal;

INTERCHAIN (BY BY SIMILARITY. BY SIMILARITY.

SIMILARITY)

INTERCHAIN (BY EACH OF THE ACT OF

SIMILARITY).

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EMBL; M74178; AAA50165.1; -.
EMBL; U37055; AAC50471.1; -.
EMBL; L11924; AAA59872.1; -.
PIR; A40331; A47136.
HSSP; P00747; 2PK4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a copyright the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and foentities requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                 PTM: MAY BE CLEAVED AFTER AA 484, TO YIELD F
HELD TOGETHER BY DISULFIDE BONDS, OR TWO SEL
SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1.
SIMILARITY: Contains 4 kringle domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROTEOLYTIC ACTIVITY, SINCE (
PROTEASES CATALYTIC SITES ARE
                                                                                                                                                                                (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                          YIELD A TWO-CHAIN MOLECULE
TWO SEPARATE POLYPEPTIDES.
ILY S1. PLASMINOGEN SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ٠
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Loutstation -
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RESULT 15
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C. INTODUCES.
C. INTODUCES.
C. INTODUCES.
C. INTODUCES.
C. ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO C. FIBRIN. CANNOT BE ACTIVATED WITH STREPTOKINASE.
C. INTEDIATELY AFTER DISSOCIATION FROM THE CLOT.
C. INMEDIATELY AFTER DISSOCIATION FROM THE CLOT.
C. ISMILARITY: BELONGS TO PEPTIDASE FAMILY SI. PLASMINOGEN SUBFAMILY.
C. ISMILARITY: Contains at least 2 kringle domains.
DR PIR; B61545; B61545.
DR HSSP; P00747; SHPG.
DR MEROPS; S01.233; -.
DR InterPro; IPR000314; Kringle.
DR InterPro; IPR00356; Prothrombin.
DR InterPro; IPR00356; Prothrombin.
DR InterPro; IPR00354; Ser protease—Try.
DR Pfam; PF00051; kringle; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P81286;
15-DEC-1998
15-DEC-1998
28-FEB-2003
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SEQUENCE
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DISULFID
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                            Schaller J., Straub C., Kampfer U., Rickli E.E.;

"Complete amino acid sequence of ovine miniplasminogen.";

"Complete amino acid sequence of ovine miniplasminogen.";

"Protein Seq. Data Anal. 5:21-25(1992).

-I- FUNCTION: PLASMIN DISSOLVES THE FIBRIN OF BLOOD CLOTS AND ACTS AS

-I- PROTEOLYTIC FACTOR IN A VARIETY OF OTHER PROCESSES INCLUDING

EMBRYONIC DEVELOPMENT, TISSUE REMODELING, TUMOR INVASION,

AND INFLAMMATION; IN OVULATION IT WEAKENS THE WALLS OF THE

GRAAFIAN FOLLICLE. IT ACTIVATES THE UROKINASE-TYPE PLASMINOGEN

ACTIVATOR, COLLAGENASES AND SEVERAL COMPLEMENT ZYMOGENS, SUCH

AS CI AND C5. IT CLEAVES FIBRIN, FIBRONECTIN, THROMBOSPONDIN,

LAMININ AND VON WILLEBRAND FACTOR.

-I- CATALYTIC ACTIVITY: Preferential cleavage: Lys-|-Xaa > Arg-|-Xaa;

higher selectivity than trypsin. Converts fibrin into soluble
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Choro
Mammalia; Eutheria; Ceta:
Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SHEEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NWIA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ovis aries (Sheep).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Plasminogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=93149995; PubMed=1492092;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=9940;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              368 QDCYHGAGEQYRGTVSKTRKGVQCQRWSAETPHKPQFTFTSEPHAQLEENFCRNPDGDSH 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       428 GPWCYTMDPRTPFDYCALRRCADDQ 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 GPWCFTTDPSIRWEYCNLTRCSDTE 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 RQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADT- 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Rel. 37, Created)
(Rel. 37, Last sequence update)
(Rel. 41, Last annotation update)
(EC 3.4.21.7) (Fragment).
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657
72
296
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chordata; Craniata; Vertebrata; Euteleostomi; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80379
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BY SIMILARITY.
N-LINKED (GLCNAC...
N-LINKED (GLCNAC...
N-LINKED (GLCNAC...
Y-> C.
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E -> K (IN dbSNP:7798).
/FTId=VAR_014569.
L -> F (IN REF. 2).
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(POTENTIAL).
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R PRINTS; PRO0722; CHYMOTRYPSIN.

R PRINTS; PR00018; KRINGLE.

DR PRINTS; PR01505; PROTHROMBIN.

PR PROM; PR000395; Kringle; 1.

DR SMART; SM000395; Kringle; 1.

DR SMART; SM00020; TYP_SFC; 1.

DR PROSITE; PS00021; TRYPSIC; 1.

DR PROSITE; PS50070; KRINGLE_2; 1.

DR PROSITE; PS50070; KRINGLE_2; 1.

DR PROSITE; PS500134; TRYPSIN DOM; 1.

DR PROSITE; PS00135; TRYPSIN SER; 1.
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Best Local S
Matches 41
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SEQUENCE
                                                                                                                                                                                                                                       Tissue I
NON TER
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00089; trypsin; 1. PRINTS; PR00722; CHYMOTRYPSIN.
 75
                      62
                                            15
                                                                 4.
                                                                                                  Similarity
PWCYTTNPRKLFDYCDIPQCESS
                     PWCFTTDPSIRWEYCNLTRCSDT
                                            CMLGIGKGYRGKKATTVAGVPCQEWAAQEPHRHGIFTPETNPRAGLEKNYCRNPDGDVNG
                                                                 CYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQ-RTPENYPNDGLTMNYCRNPDAD-TG
                                                                                                                                    343 AA;
                                                                                                                                              141
141
41
114
181
224
319
                                                                                         Conservative
                                                                                                                                                                                                                           140
>343
                                                                                                                                                                    17
120
341
181
224
                                                                                                                                   37662 MW;
                                                                                                   44.7%;
                                                                                       ; Score 234; DB 1;
; Pred. No. 5.8e-18;
12; Mismatches 28
                                                                                                                                                        SERINE PROTEASE.
CHARGE RELAY SYSTEM.
CHARGE RELAY SYSTEM.
CHARGE RELAY SYSTEM.
                                                                                                                                                                                                      HEAVY CHAIN A.
LIGHT CHAIN A.
KRINGLE 4.
KRINGLE 5.
                                                                                                                                      8DF6EBA92D596EE0 CRC64;
  97
                      84
                                                                                                             Length 343;
                                                                                         Indels
                                                                                         <u>ب</u>
                                                                                         Gaps
                                               74
                                                                   61
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Search completed: January 12, 2004, 17:23:57 Job time: 7.69549 secs

4

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Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
    8
10
11
12
13
14
16
                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed.
  485
444
439
413
403
404
405
400
395
379.5
379.5
3268.5
                                                                                                                                                                                       Score
                                                                                                                                                                                                                                             is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq
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523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      January 12, 2004, 17:18:07 ; Search time 28.4398 Seconds (without alignments) 807.553 Million cell updates/sec
                                                                                                                                                                                        Match
                                                                                                                                                                                                                                                                                                                         10:
11:
12:
13:
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  SPTREMBL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      sp_archea:*
sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                                                                 sp_mammal:*
sp_mhc:*
                                                                                                                                                                                                                                                                                     sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                                                                                                                                                                                sp_phage:*
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                                                                                                                                                                                                                                                                                                                      sp_vertebrate:*
sp_unclassified:*
                                                                                                                                                                                                                                                                                                                                             sp_rodent:*
sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                  sp_plant:*
                                                                                                                                                                                        Length DB
  454
810
132
113
105
113
359
359
812
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716
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046506
Q15146
                      Q9R0W3
018783
Q28398
Q8AVB0
                                                                  Q91WJ5
Q28911
                                                                                                   Q9UIR8
Q9UIR6
                                                                                        Q8WMR1
                                                                                                                         Q9UIR7
                                                                                                                                     Q16609
                                                                                                                                                                                                                         SUMMARIES
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Oguir5 homo sapien
O46506 papio hamad
Q15146 homo sapien
Q16609 homo sapien
Q9uir7 homo sapien
Q9uir8 homo sapien
Q9uir8 homo sapien
Q9uir6 homo sapien
Q18911 macaca fasc
Q9r03 rattus norv
O18783 macropus eu
Q28398 erinaceus eu
Q28398 erinaceus e
Q8avb0 brachydanio
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ALIGNMENTS

45	44	43	42	41	40	39	38	37	36	ω 5	34	ω ω	32	31	30	29	28	27	26	25	24	23 .	22	21	20	19	18	17
212.5	220.5	223	223	232.5	237.5	239.5	241.5	241.5	242	243.5	243.5	243.5	246.5	246.5	246.5	247.5	247.5	249.5	254	255.5	256.5	256.5	257.5	258	262	262	264	268.5
40.6	42.2	42.6	42.6	44.5	45.4	45.8	46.2	46.2	46.3	46.6	46.6	46.6	47.1	47.1	47.1	47.3	47.3	47.7	48.6	48.9	49.0	49.0	49.2	49.3	50.1	50.1	50.5	51.3
801	930	95	53	648	946	704	215	211	726	948	567	313	717	710	109	210	208	209	334	947	728	716	385	296	290	285	728	716
11	13	4.	4.	4	13	13	13	1	13	ភ	4.	13	13	13	σ	4	4.	11	0	13	σ	13	σ	4.	4	4.	11	11
Q8K0Q8	Q8AV69	Q8N696	Q9UMI2	Q9H1V4	Q07153	Q90865	042341	055027	Q90978	9X1X6	Q13208	Q9PU78	P70006	Q91402	Q9N1B8	Q13494	Q9BYM0	Q8BS17	046507	Q8AXY6	<b>Q9ВН09</b>	Q91691	Q25101	Q14519	Q02935	Q8TCE2	Q8C9G5	P70521
Q8k0q8 mus musculu	Q8av69 xenopus lae	homo sapi	homo	homo	Q07153 torpedo cal	gallue	gallus	O55027 mus musculu	ന	æ	5	Q9pu78 crocodylus	P70006 xenopus lae	Q91402 xenopus. he	8 T.	Q13494 homo sapien	homo	Q8bs17 mus musculu	papio h		Q9bh09 felis silve	Q91691 xenopus lae	Q25101 herdmania m	homo	homo	homo	mus	P70521 rattus norv

### QSUIRS OCCUPANT OCCUP Query Match Best Local Similarity InterPro; IPRO00001; Kringle. Pfam; PP00051; Kringle; 1. PRINTS; PR00018; KRINGLE. ProDom; PD000395; Kringle; 1. SMART; SM00130; KR; 1. PROSITE; PS00021; KRINGLE 1; 1. PROSITE; PS00021; KRINGLE 2; 1. Glycoprotein; Kringle; Lipoprotein. NON TER NON TER SEQUENCE SEQUENCE FROM N.A. MEDILINE-21181705; PubMed=11285247; MEDILINE-21181705; PubMed=11285247; Ogorelkova M., Kraft H.G., Ehnholm C., Utermann G.; "Single nuclectide polymorphisms in exons of the apo(a) kringles "Single nuclectide polymorphisms in exons of the apo(a) kringles "Single nuclectide polymorphisms in exons of the apo(a) kringles types 6 to 10 domain affect Lp(a) plasma concentrations and have different patterns in Afficans and Caucasians."; Hum. Mol. Genet. 10:815-824(2001) -1- SIMILARITY: CONTAINS 1 KRINGLE DOMAIN. EMBL; AP158663; AAF03680.1; EMBL; AP158663; AAF03680.1; EMBL; AP158663; AAF03680.1; TENEDONO1: Vincle APOA. O9UIR5; 01-MAY-2000 (TrEMBLrel. 13, Created) 01-MAY-2000 (TrEMBLrel. 13, Last sequence update) 01-MAR-2003 (TrEMBLrel. 23, Last annotation update) Apolipoprotein(a) (Fragment). Homo sapiens (Human). Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. Q9UIR5 NCBI\_TaxID=9606; 113 AA; 113 PRELIMINARY; 113 12685 MW; F3D65681D9B5253A CRC64; 98.9**%**; 98.9**%**; Score 517; DB 4; Pred. No. 1.7e-52; PRT; 113 ₽ Length 113; ۲

Q91XG8

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RESULT 3
Q15146
ID Q151
AC Q151
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Best Local S
Matches 80
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R InterPro; IPR000001; Kringle.
R InterPro; IPR0010014; Ser_protease_Try.
R InterPro; IPR0010154; Ser_protease_Try.
R Pfam; pF00051; Kringle; 2.
R Pfam; pF00069; KrymoTryPSIN.
R PRINTS; PR0001018; KRINGLE.
R PRINTS; PR0001018; KRINGLE.
R ProDom; pD000395; Kringle; 2.
R ProDom; pD000395; Kringle; 2.
R ProDom; pD000395; Kringle; 1.
R PROSITE; PS000010; Tryp_SPc; 1.
R PROSITE; PS00021; KRINGLE_1; 2.
R PROSITE; PS00010; Tryp_SIN_Dom; 1.
R PROSITE; PS00105; TRYPSIN_Dom; 1.
R PROSITE; PS00135; TRYPSIN_Dom; 1.
R PROSITE; PS00135; TRYPSIN_SER; 1.
G1/Copprotein; Hydrolase; Kringle; Lipoprotein; Protease;
W G1/Copprotein; Hydrolase; Kringle; Lipoprotein; Protease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
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046506;
01-JUN-1998
 Q15146;
Q15146;
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NON_TER
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (OCT-1997) to the EMBL/GenBank/DDBJ d
-!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1.
-!- SIMILARITY: CONTAINS 2 KRINGLE DOMAINS.
EMBL; AF029691; AAB97886.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cox L.A., Jett C., Hixson J.E.;
"Molecular Basis of the Apolipoprotein (a) Null Phenotype:
Site Mutation is Associated with Deletion of a Single Exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Papio hamadryas (Hamadryas baboon)
Bukaryota; Metazoa; Chordata; Cran
Mammalia; Buthoria; Primates; Cata
Cercopithecinae; Papio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Apolipoprotein a BABAPOA.
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01-MAR-2003
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                                                                                                                   159
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                                                                                                                                                                                                                 1 VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCCRNPDADT
                                                                                                                                                                                                                                                                         8O;
                                                                                                                                                                                                                                                                                                                                                                                      protease.
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                                                                                                                   GPWCFTMDPSVRWEYCNLTRCSDTEGTVV
                                                                                                                                           GPWCFTTDPSIRWEYCNLTRCSDTEGTVV
                                                                                                                                                                                             VQDCYHGDGQSYRGSFSTTVTGRTCQSWSSMTPHQHKRTPENHPNDGLTMNYCRNPDADT
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                                                                                                                                                                                                                                                                                                                                                  454 AA;
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(TrEMBLrel. 06, Last sequence update)
(TrEMBLrel. 23, Last annotation update)
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                                                                                                                                                                                                                                                                                      92.7%;
                                                                                                                                                                                                                                                                                                                                                  50041 MW;
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                                                                                                                                                                                                                                                                     Score 485; DB 6;
Pred. No. 4.2e-48;
7; Mismatches 2
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Catarrhini;
                     PRT;
                                                                                                                                                                                                                                                                                                                                                    974E30744C187B2F CRC64;
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Matches
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Best Local
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PRINTS; PRO0018; KRINGLE.

PRINTS; PRO0018; KRINGLE.

PRINTS; PRO1505; PROTHROMBIN.

ProDom; PRO1505; PROTHROMBIN.

ProDom; PRO00395; Kringle; 5.

SMART; SM00473; PAN AP; 1.

SMART; SM00473; PAN AP; 1.

SMART; SM00020; Tryp SPC; 1.

PROSITE; PS00021; KRINGLE 1; 5.

PROSITE; PS00016; KRINGLE 2; 5.

PROSITE; PS000134; TRYPSIN DOM; 1.

PROSITE; PS00134; TRYPSIN SER; 1.

PROSITE; PS00135; TRYPSIN SER; 1.

PROSITE; PS00135; TRYPSIN SER; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR003014; PAN.
InterPro; IPR003014; PAN.
InterPro; IPR003069; Pan_app.
InterPro; IPR003966; ProThrombin.
InterPro; IPR003966; ProThrombin.
InterPro; IPR001294; Ser_protease_Try.
Pfam; PP00001; Kringle; 5.
Pfam; PP00024; PAN; 1.
Pfam; PP00029; trypsin; 1.
                                                                                                                        Q16609;
Q16609;
Q1-NOV-1996
Q1-NOV-1996
Q1-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-NOV-1996 (TrEMBLrel.
01-NOV-1996 (TrEMBLrel.
01-MAR-2003 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Plasminogen precursor.
Homo sapiens (Human).
                                             Homo sapiens (Human)
Eukaryota; Metazoa; (
Mammalia; Eutheria; |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Fibrinolysis 0:0-0(1991).
-!- SIMILARITY: CONTAINS 5
EMBL; M74220; AAA36451.1; -
HSSP; P00747; 2PK4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryola; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
 SEQUENCE FROM N.A.
                      NCBI_TaxID=9606;
                                                                                            APOARGC.
                                                                                                         (APOARGC).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Glycoprotein;
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Expression of recombinant
HeLa cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Browne M.J., Chapman C.G., Mitchell D., Robinson J.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rissuE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                 374
                                                                                                                                                                                                                                                                     434
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                                                                                                                                                                                                                                                                                                                                                                                             73;
                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                       GPWCFTTDPSIRWEYCNLTRCSDTEGTVV
                                                                                                                                                                                                                                                                                                                               VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPDADK
                                                                                                                                                                                                                                                                                                                                                 GPWCFTTDPSVRWEYCNLKKCSGTEASVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                       20
810 AA;
                                                                                                                         (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hydrolase; Kringle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         810
                                               Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          90555 MW;
                                                                                                                                                                                                                                                                                                                                                                                                           84.9%;
82.0%;
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. 01, Last sequ
. 23, Last anno
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23,
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                                                                                                                           Created)
Last sequence update)
Last annotation updat
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Pred. No. 4.7e-43;
Mismatches 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL.
PLASMINOGEN
                                               Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          B05C7D4B0D020B3C CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Protease;
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                                                                                                                                                                                          132
                                                                                                                                                                                                                                                                                                    89
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Serine protease; Signal.
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                                                                                                                                                                                                                                                                                                                                                                                                                          Length 810;
                                                                                                                                                                                                                                                                                                                                                                                                Indels
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DR Pfam; PP00051; kringle; 1.
DR Pfam; PP00051; kringle; 1.
DR PRINTS; PR00018; KRINGLE.
DR PCD0m; PD000395; Kringle; 1.
DR SMART; SM00130; KR; 1.
DR SMART; PS00021; KRINGLE 1; 1.
DR PROSITE; PS00021; KRINGLE 2; 1.
KW Glycoprotein; Kringle; Lipoprotein.
VM Glycoprotein; Kringle; Lipoprotein.
VM NON_TER 11
T NON_TER 11
T SEQUENCE 113 13
                                                                             QSUILT 5
QSUILT 5
QSUILT 6
QSUILT 01-M
DT 01-M
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A Ogorelkova M., Kraft H.G., Ehhholm C., Utermann G.;
T "Single nucleotide polymorphisms in exons of the apo(a) kri
types 6 to 10 domain affect Lp(a) plasma concentrations and
different patterns in Africans and Caucasians.";
L Hum. Mol. Genet. 10:815-824(2001).
C -!- SIMILARITY: CONTAINS 1 KRINGLE DOMAIN.
R EMBL; AF158659; AAF03678.1; -.
R EMBL; AF158659; AAF03678.1; JOINED.
R HSSP; P00747; 2PK4.
R HSSP; P00747; 2PK4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 70
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      O9UIR7, PRELIMINARY; PRT; 113 AA.
O9UIR7, 01-MAY-2000 (TrEMBLrel. 13, Created)
O1-MAY-2000 (TrEMBLrel. 13, Last sequence update)
O1-MAY-2003 (TrEMBLrel. 23, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; U19518; AAA85693.1; -.
EMBL; U19517; AAA85692.1; -.
HSSP; P00747; 1PMK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Byrne C.D., Schwartz K., Lawn R.M.;
"Loss of a splice donor site at a 'skipped exon'
to appolipoprotein(a) leads to an mRNA encoding a
a single kringle domain.";
Arterioscler. Thromb. Vasc. Biol. 15:65-70(1995).
-!- SIMILARITY: CONTAINS 1 KRINGLE DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens (Human).
Eukaryota; Metazoa; C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Apolipoprotein(a)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROSITE; PS00021; KRINGLE 1; 1.
PROSITE; PS50070; KRINGLE 2; 1.
Glycoprotein; Kringle.
SEQUENCE 132 AA; 14886 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SMART; SM00130; KR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRINTS; PR00018; KRINGLE.
ProDom; PD000395; Kringle; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=95268939; PubMed=7749817;
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Fam; PF00051; kringle; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GPWCFTTDPSIRWEYCNLTRCSDTEGTV 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VQECYHSNGQSYRGTYFTTVTGRTCQAWSSMTPHQHSRTPEKYPNDGLISNYCRNPDCSA 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GPWCYTTDPNVRWEYCNLTRCSDDEGTV 112
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chordata; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                83.9%;
79.0%;
77.5%;
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Pred. No. 2.4e-43;
B; Mismatches 10
Score 413; DB 4;
Pred. No. 2.1e-40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                4F80ADF8708548CB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3794AD30A586DBBA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 132;
                        Length 113;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     kringles
and have
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RESULT

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AC QO

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RT types 6 to 10 domain affect Lp(a) plasma concentrations and different patterns in Africans and Caucasians.";

RT Hum. Mol. Genet. 10. 1815-824 (2001).

CC -!- SIMILARITY: CONTAINS 1 KRINGLE DOMAIN.

DR EMBL; AR158655; AAR03677.1; --

DR FINTS; P000130; Kringle.

DR Pfam; P000031; Kringle; 1.

R SMART; SM00130; KR; Lingle; 1.
RESULT
Q9UIR6
Q9UIR6
Q9UO
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Best Local S
Matches 67
                                                                                              O1-MAY-2000 (TrEMBLrel. 13, C
01-MAY-2000 (TrEMBLrel. 13, L
01-MAR-2003 (TrEMBLrel. 23, La
Apolipoprotein(a) (Fragment)
APOA.
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NON_TER
NON_TER 10
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Q9UIR8; PAY: 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAY-2000 (TrEMBLE 23, Last annotation update)
Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                 Q9UIR6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
MEDLINE=21181705; PubMed=11285247;
Ogorelkova M., Kraft H.G., Ehnholm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROSITE; PS00021; KRINGLE_1; 1. PROSITE; PS50070; KRINGLE_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=9606;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      83
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       h 78.0%; Score 40%; DB 4; L
Similarity 75.3%; Pred. No. 7.4e-40;
7. Mismatches 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GPWCFTTDPSIRWEYCNLTRCSDTEGTVV 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SPWCYTMDPNVRWEYCNLTQCPVTESSVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADT
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105 AA;
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                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
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Last sequence
Last annotation
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   Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                 PRT;
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on update)
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and have
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RESULT 8
GAWMEN 1
ID WOMMAN AC GAWMEN 1
DT 01-M DT 01-
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Best Local Similarity
Matches 67; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q8WMR1
Q8WMR1;
Q8WMR1;
01-MAR-2002 (TrEMBLrel. 2
01-MAR-2002 (TrEMBLrel. 2
01-MAR-2003 (TrEMBLrel. 2
Plasminogen (Fragment).
                                Glycoprotein;
NON_TER
NON_TER 35
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EMBL; AY069985; AAL58519.1; -- InterPro; IPR000001; Kringle.

InterPro; IPR003966; Prothrombin.

Pfam; PP00051; kringle; 4.

PRINTS; PR00505; KRINGLE.

PRINTS; PR00505; PROTHROMBIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Canis familiaris (Dog).
Canis familiaris (Dog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota; Metazoa; Carnivora; Fissipedia; Canidae; Canis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pirie-Shepherd S.R., Coffman K.T., Resnick Folkman J., Waters D.J.; "Angiostatin is Detectable in the Urine of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Glycoprotein; Kringle; Lipoprotein.
NON TER 1 1 1
NON TER 113 113
SEQUENCE 113 AA; 12697 MW; 51D4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR000001; Kringle.
Pfam; PF00051; kringle; 1.
PRINTS; PR00018; KRINGLE.
PRODOM; PD000395; Kringle; 1.
                                                                                                                                       PROSITE; PS00021; KRINGLE_1; 4.
PROSITE; PS50070; KRINGLE_2; 4.
                                                                                                                                                                                                            SMART; SM00130; KR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=9615;
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PROSITE; PS50070; KRINGLE_2; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CBI_TaxID=9606;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLIMNYCRNPDADT
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                                                                                                                                                                                                                                             PD000395; Kringle; 4.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VQDCYHGDGRSYRGISSTTVTGRTCQSWSSMIPHWHQRTPENYPNAGLTENYCRNPDSGK
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113 AA; 12697 MW;
   359
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                                359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                      Kringle.
   A
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   41172
   MW.
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Last sequence update)
Last annotation updat
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Pred. No. 1.8e-39;
9; Mismatches 13
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       776D35F4AB0BDD9E CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dogs with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chan R., Kisker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Spontaneous Bone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
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29E SELECTION OF SUBSECTION OF
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Best Local S
Matches 63
                                                                                              Query Match
Best Local S
Matches 63
                                                                                                                                                                                    R Pfam; pF00051; kringle; 5.

R Pfam; pF00024; pAN; 1.

R Pfam; pF000084; trypsin; 1.

R Pfam; pF000089; trypsin; 1.

R PRINTS; pR000189; KRINGLE.

R PRINTS; pR001505; PROTHROMBIN.

R PRINTS; pR001505; PROTHROMBIN.

R PROSITE; pS00021; KRINGLE 1; 5.

R PROSITE; pS00021; KRINGLE 2; 5.

R PROSITE; pS00031; KRINGLE 2; 5.

R PROSITE; pS00338; SOMATOTROPIN 2; 1.

R PROSITE; pS00134; TRYPSIN DOM; 1.

R PROSITE; PS00134; TRYPSIN SER; 1.

R PROSITE; PS00135; TRYPSIN SER; 1.

R PROSITE; PS00135; TRYPSIN SER; 1.

R PROSITE; PS00135; TRYPSIN SER; 1.

R PROSITE; PS00134; TRYPSIN SER; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Genomic Sequence Analysis in the Mouse t-complex Region Submitted (FEB-2002) to the EMBL/GenBank/DDBJ databases. |- SIMILARITY: CONTAINS 5 KRINGLE DOWAINS. EMBL; BC014773; AAM14773.1; -- EMBL; BC014773; AAM14773.1; -- EMBL; AF481053; AAM22156.1; -- HSSP; P00761; 1AN1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q91WJ5;
01-DEC-2001 (TrEMBLrel.
01-DEC-2001 (TrEMBLrel.
01-MAR-2003 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MGD; MGI:97620; Plg.
InterPro; IPR001314; Chymotrypsin.
InterPro; IPR003014; Kringle.
InterPro; IPR003014; PAN.
InterPro; IPR003966; Prothrombin.
InterPro; IPR001254; Ser_protease_Try.
InterPro; IPR001400; Somatotropin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Brathwaite M., Waeltz P., Qian Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=129/Sv;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Plasminogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q91WJ5
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                                                                                                63;
                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GPWCFTTDPSIRWEYCNLTRC 81
SPWCYTTDPSVRWEFCNLRKC
                         (OCT-2001) to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                Conservative
                                                                                                                76.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              77.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19,
19,
23,
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Last annotation update)
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Pred. No. 8.5e-39;
                                                                                              Score 400; DB 11;
Pred. No. 6.2e-38;
4; Mismatches 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           359
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dudekula
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                                                                                                                                              Length 812;
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61

GPWCFTTDPSIRWEYCNLTRCSDTEGTVV

89

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RESULT 10
Q28911
Q28911
AC Q2891
DT 01-W.
DT 01-
  RRA RRA
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Best Local S
Matches 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00051; kringle; 1.
PRINTS; PR00018; KRINGLE.
ProDom; PD000395; Kringle; 1.
SMART; SM00130; KR; 1.
SMOSITE; PS00021; KRINGLE 1; 1.
PROSITE; PS00021; KRINGLE 2; 1.
Glycoprotein; Kringle; Lipoprotein.
NON TER 145 145
SEQÜENCE 145 AA; 16097 MW; 0D2DA2
                                                                                                                                                                                                                                                                                              Q9R0W3;
Q9R0W3;
01-MAY-2000
01-MAY-2000
01-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q28911;
Q28911;
Q1-NOV-1996
Q1-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.

MEDLINE-95395387; PubMed=7666007;

Ramharack R., Spahr M.A., Hicks G.W., Kieft K.A., Brammer D.W.,

Minton L.L., Newton R.S.;

"Gemfibrozil significantly lowers cynomolgus monkey plasma

"Gemfibrozil significantly lowers cynomolgus monkey plasma

lipoprotein[a]-protein and liver apolipoprotein[a] mRNA levels.'

J. Lipid Res. 36:1294-1304(1995).

J. Lipid Res. 36:1294-1304(1995).

J. SIMILARITY: CONTAINS 1 KRINGLE DOMAIN.

EMBL; S79621, AAD14312.1;

EMBL; S79621, AD14312.1;

HSSP; P00747; 2PK4.
Bangert K., Johnsen A.H., Thorsen S.; "Rat plasminogen: cDNA and gene structure."; Submitted (MAY-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                     Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chor
Mammalia; Eutheria; Rode
                                                                                                                                                                                                                                                  Plasminogen
PLASMINOGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chorn
Mammalia; Eutheria; Prim
Cercopithecinae; Macaca.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Apolipoprotein[a] (Fragment).
APOLIPOPROTEIN[A].
                                                                        TISSUE=Liver;
                                                                                               SEQUENCE FROM N.A.
                                                                                                                                           NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Macaca fascicularis (Crab eating macaque) (Cynomolgus monkey).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-MAR-2003
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMMYCRNPDADT
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                                                                                                                                                                                                                                                                                              (TrEMBLrel. 13, (TrEMBLrel. 13, (TrEMBLrel. 23,
                                                                                                                                                                                                                                                                       protein
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                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                          Chordata;
Rodentia;
                                                                                                                                                                                                                                                                  rel. 13, Last sequence update)
rel. 23, Last annotation update)
precursor (EC 3.4.21.7).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75.5%;
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Last annotation updat
                                                                                                                                                                                                                                                                                                                                                  Created)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 395; DB 6;
Pred. No. 3.4e-38;
                                                                                                                                                                     Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rattus
                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
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RESULT 12
01878
JID 01878
AC 01878
AC 01878
DT 01-JA
DT 01-MA
DT 0
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Pfam; PF000524; PAN; 1.

Pfam; PF00089; trypsin; 1.

Pfam; PF00089; trypsin; 1.

PRINTS; PR00722; CHYMOTRYPSIN.

PRINTS; PR01505; PROTHROMBIN.

PRODOm; PD000395; Kringle; 5.

SMART; SM00130; KR; 4.

SMART; SM000473; PAN AP; 1.

SMART; SM000473; PAN AP; 1.

SMART; SM00020; Tryp_SPc; 1.

SMART; SM00020; Tryp_SPc; 1.

PROSITE; PS00021; KRINGLE 1; 5.

PROSITE; PS00038; SOMATOTROPIN 2; 1.

PROSITE; PS00134; TRYPSIN HIS; 1.

PROSITE; PS00135; TRYPSIN SER; 1.
                                                                                                                                                                                                                                                                                                                                                                           018783
018783;
Lawn R.M., Schwartz K., Patthy L.;
"Convergent evolution of apolipoprotein(a) in primates
Proc. Natl. Acad. Sci. U.S.A. 94:11992-11997(1997).
-!- SIMILARITY: CONTAINS 5 KRINGLE DOMAINS.
EMBL; AF012297; AAB65760.1; -.
                                                                                                                                                                                                                 Macropus eugenii (Tammar wallaby).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Metatheria; Diprotodontia; Macropodidae; N
                                                                                                                                                                                                                                                                                                                                01-JAN-1998
01-JAN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Glycoprotein; Hydrolase; \overline{K}ringle; Protease; Serine protease; SIGNAL 1 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   réceptor site for plasminogen.";
J. Biol. 1962; 10829 (1991)
-- SIMILARITY: CONTAINS 5 KRINGLE D
EMBL; AJ242649; CAB46014.1;
--
HSSP; P00747; 1PMK.
                                                                                                         SEQUENCE FROM N.A.
TISSUE=Liver;
MEDLINE=98004511; PubMed=9342350;
                                                                                                                                                                                                                                                                                  Plasminogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Identification of the rat Heymann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=91250378; PubMed=1645711;
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InterPro; IPR001400; Somatotropin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR003014;
InterPro; IPR003609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLIMNYCRNPDAD- 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RGPWCFTTDPSVRWEYCNLKRCSETGGGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGPWCFTTDPSIRWEYCNLTRCSDTEGTV
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812 A
                                                                                                                                                                                                                                                                                                         (TrEMBLrel. (TrEMBLrel. (TrEMBLrel. )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
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71.9%;
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Prothrombin.
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Last
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9: Mismatches 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 379.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PLASMINOGEN.
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                                                                                                                                                                                                                                                                                                           sequence up
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                                                                                                                                                                                                                        Macropus.
                                                                                                                                                                                                                                               Euteleostomi;
                                                                     and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       812;
                                                                  hedgehog.";
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Q28398
ID Q2839
AC Q2
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R InterPro; IPR003001; Kringle.

R InterPro; IPR003014; PAN.

R InterPro; IPR00366; ProThrombin.

R InterPro; IPR00366; ProThrombin.

InterPro; IPR00396; ProThrombin.

InterPro; IPR001254, Ser protease_Try.

Pfam; PF00024; PAN; 1.

Pfam; PF00024; PAN; 1.

Pfam; PF00018; KRINGLE.

R Pf1NTS; PR001039; KRINGLE.

R PRINTS; PR001039; KRINGLE.

R PRINTS; PR00139; KRINGLE.

R PRINTS; PR00139; KRINGLE; 1.

R PROSITE; SM001473; PAN AP; 1.

SMART; SM000473; PAN AP; 1.

R SMART; SM00020; Tryp SPc; 1.

R PROSITE; PS00021; KRINGLE; 1.

R PROSITE; PS000124; TRYPSIN IN I.

PROSITE; PS00134; TRYPSIN JER; 1.

R PROSITE; PS00134; TRYPSIN JER; 1.

R PROSITE; PS00134; TRYPSIN SER; 1.
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Best Local Similarity
Matches 53; Conserv
                                                                                       InterPro; IPR000001; Kringle.
Pfam; PF00051; kringle; 31.
PRINTS; PR00018; KRINGLE.
ProDom; PD000395; Kringle; 31.
SMART; SM00130; KR; 31.
PROSITE; PS00021; KRINGLE 1; 30.
PROSITE; PS50070; KRINGLE 2; 31.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q28398 PRELIMINARY; PRT; 2869 AA.
Q28398;
01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-NAR-2003 (TrEMBLrel. 23, Last annotation update)
Apollopoprotein(a) (Fragment).
Erinaceus europaeus (Western European hedgeheg).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Insectivora; Erinaceidae; Erinaceinae; Erinace
   Glycoprotein; Kringle; Lipoprotein.
NON TER 1 1
SEQUENCE 2869 AA; 318601 MW; 95
                                                                                                                                                                                                                                                                                                                                                                hedgehog apolipoprotein(a).";
J. Biol. Chem. 270:24004-24009(1995)
-!- SIMILARITY: CONTAINS 31 KRINGLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=96025778; PubMed=7592597;
Lawn R.M., Boonmark N.W., Schwartz K., Lindahl G.E.,
Byrne C.D., Fong K.J., Meer K., Patthy L.;
"The recurring evolution of lipoprotein(a). Insights
                                                                                                                                                                                                                                                                                                        EMBL; U33170; AAC48522.1;
HSSP; P00747; 1PMK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9365;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               428 SPWCYTMDPTVRWEFCNLEKCSGTGSTVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   368 IQECYEGKGENYRGTTSTTISGKKCQAWSSMTPHQHKKTPDNFPNADLIRNYCRNPDGDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 GPWCFTTDPSIRWEYCNLTRCSDTEGTVV 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   68.8%; Score 360; DB 6; 59.6%; Pred. No. 2.7e-33; tive 20; Mismatches 16;
      9527CEF985A4FB2A CRC64;
                                                                                                                                                                                                                                                                                                                                                                       DOMAINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     456
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Q91XG
ID Q91XG
AC Q91XG
DT 01-DE
DT 01-DE
DT 01-MA
DE HEPAT
GN HGFL.
OS MANNA I
OC BANNA I
OC MANNA
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Best Local S
Matches 47
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Best Local Similarity
Matches 46; Conserv
                                                                                                                                                                                                                                                                                         Q8AVB0;
Q8AVB0;
01-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.

Hanumanthaiah R., Day K., Jagadeeswaran P.;

"Comprehensive analysis of blood coagulation pathways in "Contuion of coagulation factor genes and identification factor VIII.";

Blood Cells Mol. Dis. 0:0-0(2002).

EMBL; AF515276; AAN71006:1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-MAR 2003 (TrEMBLrel. 23, Created)
01-MAR 2003 (TrEMBLrel. 23, Last sequence update)
01-MAR 2003 (TrEMBLrel. 23, Last sequence update)
01-MAR 2003 (TrEMBLrel. 23, Last annotation update)
Plasminogen precursor (Fragment).
Brachydanio rerio (Zebrafish) (Danio rerio).
Bukarydanio rerio (Zebrafish) (Danio rerio).
Eukarydi; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
Cyprinidae; Danio.
                   Strausberg R.;
Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: CONTAINS 4 KRINGLE DOMAINS.
EMBL; BC010551; AAH10551.1; -.
HSSP; P00761; 1AN1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AF
                                                                                                                                                                                                                                       Mus musculus (Mouse).
Eukaryota; Metazoa; C
Mammalia; Eutheria; R
                                                                                                                                                                                                            NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                              TISSUE=Liver;
                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CBI_TaxID=7955;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60 TGPWCFTTDPSIRWEYCNLTRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 ROCYHGNGOSYRGIFSTTVIGRICQSWSSMIPHRHOR-TPENYPNDGLIMMYCRNPDAD-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 53.7%;
                                                                                                                                                                                                                                          Chordata;
Rodentia;
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Pred. No. 2.1e-24;
""matches 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 303; DB 6;
Pred. No. 4.8e-26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              81
                                                                                                                                                                                                                                            Craniata; Veri
Sciurognathi;
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                                                                                                                                                                                                                                            Vertebrata; Euteleostomi;
thi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ä
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of zebrafish
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DR InterPro; IPRO01314; Chymotrypsin.

DR InterPro; IPRO0101; Kringle.

DR InterPro; IPRO01014; Kringle.

DR InterPro; IPRO01049; Pan app.

DR InterPro; IPRO0154; Ser_protease_Try.

DR InterPro; IPRO0154; Ser_protease_Try.

DR Pfam; PF00051; kringle; 4.

DR Pfam; PF00051; kringle; 4.

DR Pfam; PF00024; Kringle; 4.

DR Pfam; PF00025; Kringle; 4.

DR PRINTS; PR00122; CHYMOTRYPSIN.

DR PRINTS; PR001039; Kringle; 4.

DR PRINTS; PR001039; Kringle; 4.

DR PRINTS; PR001039; Kringle; 4.

DR PRINTS; PR001030; KR; 4.

DR PRINTS; PR001010; KR; 4.

DR PROSITE; PS00021; KRINGLE 1; 4.

DR SMART; SM00110; KR; 4.

DR SMART; SM00110; KR; 4.

DR PROSITE; PS00021; KRINGLE 2; 4.

DR PROSITE; PS00070; MRINGLE 2; 4.

DR PROSITE; PS00070; PR00070; PR0007
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Minimum DB
Maximum DB
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Maximum Match 100%
Listing first 45 summaries
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A Geneseq 19Jun03:*

1: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1980.DAT:*
2: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1981.DAT:*
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3: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1983.DAT:*
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5: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1984.DAT:*
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7: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1986.DAT:*
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13: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1993.DAT:*
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15: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1999.DAT:*
16: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1999.DAT:*
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398.314 Million cell updates/sec
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and is Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, derived by analysis of the total score distribution.

9	80	7	6	տ	4.	w	2	1	Result No.	
444	444	444	444	444	444	444	523	523	Score	
84.9	84.9	84.9	84.9	84.9	84.9	84.9	100.0	100.0	Query	dР
375	374	369	364	192	189	90	308	89	Query Match Length DB	
21	21	21	21	21	21	21	22	22	DB.	
AAY79225	AAY79226	AAY53868	AAB01905	AAB01919	AAB01918	AAB01909	AAY72944	AAY72946	IĐ	
Angiogenesis inhib	Angiogenesis inhib	Amino acid sequenc	Human plasminogen	Human plasminogen	Human plasminogen	Human plasminogen	Human angiogenesis	Human apolipoprote	Description	

45	44	43	42	41	40	39	38 8	37	36	35	34	IJ IJ	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10
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AAY82690	·	AAY08685	AAW31169	AAR34428	AAR12938	AAR13221	AAR13220	AAR12406	AAR13219	AAR08065	AAR20013	ABG76087	AAE23660	AAG67223	AAY50867	AAY99589	AAB01887	AAW34285	AAB36562	AAR60519	ABB75943	ABB75944	AAY02100	ABB75942	AAG79749	AAR22503	AAR22499	ABB75941	AAW95051	AAY79224	AAW51457	AAY02105	AAM48894	AAB16450	AAW07579
Human plasminogen	SEQ ID 77 of WO991	Human plasminogen	Plasminogen protei	Sequence encoded b	Plasminogen mutein	Human plasminogen	R561S human plasmi	R561E human plasmi		Human plasminogen	PA mutant Plg 1-54	Human plasminogen	Human plasminogen	Amino acid sequenc	Human plasminogen	Human plasminogen.	Human plasminogen,	Human plasminogen.	Mammalian kringle	Human 'Glu' plasmi	Angiotensin-tumour	Angiotensin-tumour	A multifunctional	Endothelial cell g	Human plasminogen	[GARSYQ] - [Plasmino	[GARSYQ] - [Plasmino	Human plasminogen	Amino acid sequenc	Angiogenesis inhib	Human plasminogen	A multifunctional	Human angiostatin	Human angiostatin	Human kringle 1-4B

### ALIGNMENTS

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AAY72946 standard; Protein; 89 B

## AAY72946;

13-JUN-2001 (first entry)

Human apolipoprotein(a) kringle domain IV37, LK7 protein

Human; angiogenesis inhibitor; LK7; apolipoprotein(a) kringle domain; angiogenesis-mediated disease; cancer; rheumatoid arthritis; therapy; cytostatic; antirheumatic; antiarthritic; antipsoriatic; psoriasis; ocular angiogenic disease; endothelial cell proliferation; tumour; cell migration.

WO200119868-A1 Homo sapiens.

## 22-MAR-2001.

15-SEP-1999; 99WO-KR00554.

# 15-SEP-1999; 99WO-KR00554.

(MOGA-) MOGAM BIOTECHNOLOGY RES INST.

Chang J, Kim JS, Park EJ, Yum J, Chung ŝ

WPI; 2001-244787/25. N-PSDB; AAD03257.

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RESULT 2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Domain
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAY72944 standard; Protein;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human angiogenesis inhibitor, LK68 protein.
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         15-SEP-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein"
                                                                                                                                                                                                                                                                                                                                      /note= "Apolipoprotein(a) kringle domain V38,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note= "Apolipoprotein(a) kringle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note= "Apolipoprotein(a) kringle
                                                                                                                                                                                                                                                                                                                                                                                       'label= KV38
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Pred. No. 5.2e-46;
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                                                                                                                                                                                                                                                                                                                                                                                                                                        Plasminogen; human; kringle domain; endothelial cell proliferation; angiogenesis; antiproliferative; antiarteriosclerotic; cytostatic; antipsoriatic; antianflammatory; antiulcer; antirheumatic; antiarth
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMWYCRNPDADT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       308 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
ilarity 100.0%;
Conservative 0
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                                                                                                               96US-0643219
97US-0832087
                                                                                                                                                                                                97US-0851350
                                                                                                                                                                                                                                                                                                                                                                                                                       cancer; tumour; autoimmune disease
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 523; DB 2
Pred. No. 2e-45;
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178 60

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RESULT 4
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention relates to a method of preparing plasminogen kringle 5 CC peptide fragments. The method comprises mixing mammalian plasminogen and cellstase in the ratio 1:100-1:300, followed by incubating and isolating the fragment. The kringle 5 peptides are inhibitors of angiogenesis and CC endothelial cell proliferation and migration. The peptides are useful contreating angiogenic diseases, primary and metastatic solid tumours can carcinomas of various organs such as breast, genital tract, and carcinomas of various organs such as breast, genital tract, carcinomas from haematopoietic malignancies such as leukaemias and collid tumours carising from haematopoietic malignancies such as leukaemias and collid tumours carising from haematopoietic malignancies such as leukaemias and collid tumours carising from haematopoietic malignancies such as leukaemias and collid tumours carising from haematopoietic malignancies such as leukaemias and collid tumours carising from haematopoietic malignancies uch as leukaemias and collid tumours carising from haematopoietic malignancies with a such as leukaemias and collid tumours carising from haematopoietic malignancies (e.g., haemangiomas, Osler-Webber CC (e.g., psoriasis), blood vessel disease (e.g. haemangiomas, Osler-Webber CC (e.g., psoriasis), blood vessel disease (e.g., cat scratch cc endothelial cells (e.g., Crohn's disease, atherosclerosis), diseases could vice angiogenesis as a pathologic consequence (e.g., cat scratch cc disease and ulcers). The peptides are also useful as a birth control collidary consequence (e.g., cat scratch control asymptotic are also useful as a birth control collidary consequence (e.g., cat scratch control asymptotic consequences (e.g., cat scratch control consequences (e.g., cat scratch control consequences (e.g., cat scratch control contr
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Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                          Plasminogen; human; kringle domain; endothelial cell proliferation; angiogenesis; antiproliferative; antiarteriosclerotic; cytostatic; antipporiatic; antiinflammatory; antiulcer; antiheumatic; antiarthritic; antiangiogenic; cancer; tumour; autoimmune disease.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
  03-MAY-1996;
03-APR-1997;
                                                                       05-MAY-1997;
                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                            Human plasminogen kringles 4-5 (Val355-Ala543).
                                                                                                                                                                                                                                                                                                                                                                                                                                  18-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAB01918 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Example 17; Page -; 48pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           incubation and isolation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rexemplification of the invention.
This sequence is not shown in the specification, but is deriven the full length human plasminogen sequence (AAB01887) shown in
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96US-0643219.
97US-0832087.
                                                                       97US-0851350.
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                                                                                                                                                                                                                                                                                                                                                                                                                                entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 444; DB 21;
Pred. No. 6.2e-38;
7; Mismatches 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               89
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RESULT 5
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AAB01920
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AAB0
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                                                                                                                                                                                                                                                                                                            plasminogen; human; kringle domain; endothelial cell proliferation;
angiogenesis; antiproliferative; antiarteriosclerotic; cytostatic;
antipsoriatic; antiinflammatory; antiulcer; antirheumatic; antiarth
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                                                                                                                                                                                                                                                                   antiangiogenic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human plasminogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18-SEP-2000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAB01919 standard; Protein; 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (ABBO ) ABBOTT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPDADK 60
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                  kringles 4-5 (Val355-Phe546).
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Pred. No. 1.4e-37;
7; Mismatches 9
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                                                                                                                                                                                                                                                                               autoimmune disease
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 189;
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02-MAY-2000

US6057122-A.

05-MAY-1997;

97US-0851350

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AABO1905
ID AABO
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AC AABO
XX
AC AABO
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DT 18-S
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DE Huma
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DE Huma
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DE Angi
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to a method of preparing plasminogen kringle 5 CC peptide fragments. The method comprises mixing mammalian plasminogen and CC elastase in the ratio 1:100-1:300, followed by incubating and isolating the fragment. The kringle 5 peptides are inhibitors of anglogenesis and cendothelial cell proliferation and migration. The peptides are useful CC for treating angiogenic diseases, primary and metastatic solid tumours and carcinomas of various organs such as breast, genital tract, CC endocrine glands, skin, tumours of the brain and eyes and solid tumours arising from haematopoietic malignancies such as leukaemias and CC lymphomas. They are also used for the prophylaxis of various autoimmune diseases (e.g., rheumatoid arthritis), ocular diseases, skin diseases (e.g., psoriasis), blood vessel diseases (e.g. haemangiomas, Osler-Webber CC syndrome), diseases caused by excessive or abnormal stimulation of CC which have angiogenesis as a pathologic consequence (e.g., cat scratch disease and ulcers). The peptides are also useful as a birth control control which inhibits ovulation and establishment of the plasenta.

CC Sequences AAB01906-B01919 represent fragments of human plasminogen used in an exemplification of the invention.
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                                                                    Plasminogen; human; kringle domain; endothelial cell proliferation; angiogenesis; antiproliferative; antiarteriosclerotic; cytostatic; antipsoriatic; antiinflammatory; antiulcer; antirheumatic; antiarth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Preparation of Kringle five peptide fragment for treating various disorders such as angiogenic, ocular, skin diseases and cancer, involves mixing mammalian plasminogen and elastase followed by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 03-MAY-1996;
03-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
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                                                                                                                                                 Human
                                                                                                                                                                                     18-SEP-2000
                                                                                                                                                                                                                                                          AAB01905 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Note: This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-349573/30.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Davidson DJ
                   Homo
                                                     antiangiogenic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (ABBO ) ABBOTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This sequence is not shown in the specification, but is derived the full length human plasminogen sequence (AAB01887) shown in
                                                                                                                                               plasminogen kringles 1-4 (angiostatin).
                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                     GPWCFTTDPSVRWEYCNLKKCSGTEASVV
                                                                                                                                                                                                                                                                                                                                                                                       GPWCFTTDPSIRWEYCNLTRCSDTEGTVV 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                  VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADT
                                                                                                                                                                                                                                                                                                                                                                                                                           VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTWNYCRNPDADK 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and isolation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             192 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LAB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 96US-0643219.
97US-0832087.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84.9%;
                                                       tumour;
                                                                                                                                                                                                                                                              364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 444; DB 21;
Pred. No. 1.4e-37;
                                                         autoimmune disease
                                                                                                                                                                                                                                                                                                                                                        68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 192;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                          antiarthritic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
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RESULT 7
AAY53868
ID AAY5
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XX
AC AAY5
AC AAY7
XX
DT 13-N
XX
DE Amir
XX
XX
Huma
KW angg
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                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention relates to a method of preparing plasminogen kringle 5 cc peptide fragments. The method comprises mixing mammalian plasminogen and cc elastase in the ratio 1:100-1:300, followed by incubating and isolating the fragment. The kringle 5 peptides are inhibitors of anglogenesis and cc emothelial cell proliferation and migrary and metastatic solid tumours cf or treating angiogenic diseases, primary and metastatic solid tumours cand carcinomas of various organs such as breast, genital tract, cand carcinomas of various organs such as breast, genital tract, composition matematopoletic malignancies such as leukaemias and cc arising from haematopoletic malignancies such as leukaemias and cc diseases (e.g., rheumatoid arthritis), ocular diseases, skin diseases (e.g., psoriasis), blood vessel diseases (e.g. haemangiomas, Osler-Webber (e.g., psoriasis), blood vessel diseases (e.g. haemangiomas, Osler-Webber (composition), diseases and ulcers). The peptides are also useful as a birth control cc which have anglogenesis as a pathologic consequence (e.g., cat scratch codes and ulcers). The peptides are also useful as a birth control cc sequences habilite ovulation and establishment of the placenta. Cc sequences habilite ovulation of the invention.
                                                                                                                                                                                                                                                                                                                                                                                          Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Preparation of Kringle five peptide fragment for treating various disorders such as angiogenic, ocular, skin diseases and cancer, involves mixing mammalian plasminogen and elastase followed by incubation and isolation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             03-MAY-1996;
03-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US6057122-A
                                                                                                    13-MAR-2000
                                                                                                                                     AAY53868
                                                                                                                                                                     AAY53868 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Example 17; Page -; 48pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              05-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           figure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (ABBO ) ABBOTT
                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               an exemplification of the invention.
te: This sequence is not shown in the
om the full length human plasminogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000-349573/30.
                                                                                                                                                                                                                                                                                                                         276 VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPDADK 335
                                                                                                                                                                                                                                                        336 GPWCFTTDPSVRWEYCNLKKCSGTEASVV
                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ğ
                                                                                                                                                                                                                                                                           GPWCFTTDPSIRWEYCNLTRCSDTEGTVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                               364 AA;
                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                    (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             96US-0643219.
97US-0832087.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97US-0851350
                                                                                                                                                                   protein;
                                                                                                    entry)
                                                                                                                                                                                                                                                                                                                                                                                                            84.9%;
                                                                                                                                                                                                                                                                                                                                                                                         Score 444; DB 21; L
Pred. No. 2.8e-37;
Pred. No. 2.8e-37;
                                                                                                                                                                                                                                                                                           89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                specification, but is deri
sequence (AAB01887) shown
                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    but is derived
                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                              Gaps
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Human; plasminogen; angiostatin; greenstatin; thrombolytic factor; angiogenesis inhibitory protein; proliferation; angiogenesis; cancer; vascular endothelial cell; ophthalmic disease; glaucoma;

Amino acid sequence of human angiostatin protein.

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RESULT 8
AAY79226
ID AAY7
XX AAY7
XX AAY7
XX I 19-J
XX I 19-J
XX Angi
XX Angi
XX Angi
XX Snak
XW Snak
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Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  is derived from the plasminogen protien, and comprises amino acids 99-467. Greenstatin is also derived from plasminogen, and comprises amino acids 101-354. Angiostatin and greenstatin are used as thrombolytic factors and angiogenesis inhibitory proteins. Angiostatin contains the kringle 1-4 region of plasminogen, and greenstatin contains the kringle 1-4 region of plasminogen, and greenstatin contains the kringle 1-5 region of plasminogen, and greenstatin contains the kringle 1-6 region of plasminogen, and greenstatin a high sumber of disulphide bonds, they are difficult to purify. The specification describes a method for the purification of such angiogenesis inhibitory proteins. The method comprises solubilising the proteins, produced as inclusion boddes in Escherichia coli and glutathione. The angiogenesis inhibitory proteins specifically inhibit proliferation of vascular endothelial cells, but not that of non-endothelial cancers or normal cells. The angiogenesis inhibitory
Angiogenesis inhibitor; plasminogen; human; K4 protease; snake venom; cobra; antimetastatic; cytostatic; antitumour prostate cancer; breast cancer; colon cancer; lung cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  proteins are used to suppress angiogenesis, specifically for treating cancers (e.g. of lung, skin and brain) or ophthalmic diseases (e.g. glaucoma and diabetic retinopathy), but also arthritis and psoriasis.
                                                                                                                                        AAY79226;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Purifying angiogenesis inhibitors produced as Escherichia coli, useful as anticancer agents
                                                                  Angiogenesis inhibitor obtained by plasminogen cleavage.
                                                                                                      19-JUN-2000
                                                                                                                                                                        AAY79226 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present sequence represents the human angiostatin protein. It
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 2; Page 45-47; 55pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2000-086703/07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nox
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-MAY-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          diabetic retinopathy; arthritis; psoriasis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (GREC ) KOREA GREEN CROSS CORP.
                                                                                                                                                                                                                                                                                                                               276
                                                                                                                                                                                                                                                                                             13
                                                                                                                                                                                                                                                                                                                                                               1 VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADT 60
                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          So SH, ;
Chang S;
                                                                                                                                                                                                                                                                                       GPWCFTTDPSIRWEYCNLTRCSDTEGTVV 89
                                                                                                                                                                                                                                                                                                                               VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPDADK 335
                                                                                                                                                                                                                                                            GPWCFTTDPSVRWEYCNLKKCSGTEASVV 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    369 AA;
                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98KR-0019535.
99KR-0019144.
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                                                                                                                                                                        Protein; 374
                                                                                                                                                                                                                                                                                                                                                                                                                84.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Lee H,
                                                                                                                                                                                                                                                                                                                                                                                          7;
                                                                                                                                                                                                                                                                                                                                                                                              Score 444; DB 21;
Pred. No. 2.8e-37;
7; Mismatches 9;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Jung S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kim Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     recombinant proteins in and for treating ocular
                 antitumour;
                                                                                                                                                                                                                                                                                                                                                                                                                                Length 369;
                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Lee JH,
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                                                                                                                                                                                                                                                                                                                                                                                               Gaps
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RESULT 9
AAY79225
ID AAY7
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AC AAY7
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AC AAY7
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AC AAY7
XX
AT 19-J
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                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present sequence represents a preferred angiogenesis inhibitor of the invention that is obtained by cleavage of human plasminogen with spitting cobra (Naja nigricollis nigricollis) venom K4 protease and plasmin. The K4 protease cleaves native plasminogen following amino acid residue 452, with little or no disruption of the first 4 plasminogen kringles. Plasmin cleaves between residues 77 and 78 of human plasminogen. Thus, the present protein spans amino acid residues 78-451 of plasminogen. The angiogenesis inhibitors obtained from plasminogen can be used to inhibit tumour growth in a mammal preferably human. They are useful for treating angiogenesis associated diseases such as: solid tumours, prostate cancer, breast cancer, colon cancer and lung cancer (claimed);
                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                            blood-borne tumors such as leukaemia; metastasis; benign tumours; rheumatoid arthritis; psoriasis; ocular angiogenic diseases; myocardial angiogenesis; plaque neovascularization; telangiectasia; haemophiliac joints; angiofibroma; wound granulation; excessive or abnormal stimulation of endothelial cells; and as birth control agents by perventing vascularization required for embryo implantation. The inhibitors are administered also to extend the dormancy of micrometastases and to stabilize any residual primary
                                                 AAY79225;
                                                                                AAY79225 standard;
                                                                                                                                                                                                                                                                                                                                                                                                cumour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 1; Fig 10; 72pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New angiogenesis inhibitors useful for treating solid tumors, leukemias, tumor metastasis, benign tumor, rheumatoid arthritis, psoriasis and ocular angiogenic diseases -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mann KG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20-AUG-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200010506-A2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2000-246485/21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              leukaemia; metastasis; contraceptive; therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (UYVE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sapiens
                                                                                                                                                                337
                                                                                                                                                                                                                               277 VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPDADK 336
                                                                                                                                                                                 61 GPWCFTTDPSIRWEYCNLTRCSDTEGTVV 89
                                                                                                                                                                                                                                                                                              73;
                                                                                                                                                                                                                                                              مبو
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              UNIV VERMONT & STATE AGRIC COLLEGE
                                                                                                                                                                GPWCFTTDPSVRWEYCNLKKCSGTEASVV 365
                                                                                                                                                                                                                                                VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Jenny NS;
                                                                                                                                                                                                                                                                                                                                                               374
                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                               Å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98US-0097244.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note- "N-glycosylated"
                                                                                 Protein; 375
                                                                                                                                                                                                                                                                                                              84.9%;
                                                                                                                                                                                                                                                                                             Score 444; DB 21;
Pred. No. 2.9e-37;
7; Mismatches 9;
                                                                                                                                                                                                                                                                                                                           Length 374;
                                                                                                                                                                                                                                                                                                Indels
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19-JUN-2000

(first entry)

Angiogenesis inhibitor obtained by plasminogen cleavage

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RESULT 10
AAW07579
ID AAW07
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                                                                                                                                                                                                                                                                                                                        The present sequence represents a preferred angiogenesis inhibitor of the invention that is obtained by cleavage of human plasminogen with spitting cobra (Naja nigricollis nigricollis) venom K4 protease and plasmin. The K4 protease cleaves native plasminogen following amino acid residue 452, with little or no disruption of the first 4 plasminogen kringles. Plasmin cleaves between residues 77 and 78 of human plasminogen. Thus, the present protein spans amino acid residues 77-451 of plasminogen. The angiogenesis inhibitors obtained from plasminogen can be used to inhibit tumour growth in a mammal, preferably human. They are useful for treating angiogenesis-associated diseases such as solid tumours, prostate cancer, breast cancer, colon cancer and lung cancer (claimed); blood-borne tumors such as leukaemia; metastasis; benign tumours; rheumatoid arthritis; psoriasis; ocular angiogenic diseases; myocardial angiogenesis; plaque neovascularization; telangiectasia; haemophiliac joints; angiofibroma; wound gramulation; excessive or implantation. The inhibitors are administered also to extend the cormancy of micrometastases and to stabilize any residual primary
                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                             Best Local
                                                                                                                                                                                                                                             Query Match
AAW07579 standard; protein; 378 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New angiogenesis inhibitors useful for treating solid tumors, leukemias, tumor metastasis, benign tumor, rheumatoid arthritis, psoriasis and ocular angiogenic diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Anglogenesis inhibitor; plasminogen; human; K4 protease; snake venom; cobra; antimetastatic; concetatic; antitumour prostate cancer; breast cancer; colon cancer; lung cancer; leukaemia; metastasis; contraceptive; therapy.
                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 1; Fig 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mann KG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19-AUG-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200010506-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (UYVE-) UNIV VERMONT & STATE AGRIC COLLEGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        leukaemia; metastasis;
                                                                                                                                               278
                                                                                                                                                                                                                73;
                                                                                                                                                                                                                                 Similarity
                                                                                GPWCFTTDPSVRWEYCNLKKCSGTEASVV 366
                                                                                                              GPWCFTTDPSIRWEYCNLTRCSDTEGTVV 89
                                                                                                                                               VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPDADK 337
                                                                                                                                                                VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADT 60
                                                                                                                                                                                                                                                                                375
                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                B
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             72pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note-
                                                                                                                                                                                                                               84.9%;
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                                                                                                                                                                                                          7;
                                                                                                                                                                                                                           Score 444; DB 21;
Pred. No. 2.9e-37;
                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                 9;
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                                                                                                                                                                                                                                              Length 375;
                                                                                                                                                                                                                Indels
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27-OCT-2000 AAB16450; AAB16450

(first entry)

standard;

Protein; 378

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RESULT 11
AAB16450
ID AAB16
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AC AAB16
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DT 27-OC
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                                                                                                                                                                                                                                                                                                                                                                                                                   inhibiting endothelial cell proliferation, using as active component inhibiting endothelial cell proliferation, using as active component analysistatin fragment, a combination of angiostatin fragments, or aggregate angiostatin. The fragment is preferably derived from murine, thuman, Rhesus, porcine or bovine plasminogen and is a kringle 1-2, kringle 1-4 kringle 2-3, kringle 1-3, kringle 1-2, kringle 1-4 kringle 2-3, kringle 1-3, kringle 1-2, kringle 1-4 kringle 1-2 kringle 1-4 kringle 1-4 kringle 1-2 kringle 1-4 kringle 1-4 kringle 1-4 kringle 1-4 kringle 1-2 kringle 1-2 kringle 1-2 kringle 1-2 kringle 1-4 kringle 1-2 kringle a will kringle 1-4 kringle 1-2 kringle a kringle for treating and bovine plasminogen. The active component can be used for treating angiogenesis-mediated diseases such as cancer, arthritis, macular degeneration and diabetic retinopathy. It can also be used to develop antibodies for use in diagnosis, detection and therapy.

The present sequence, human kringle 1-4 kKLS, is a specific angiostatin fragment which can be used in the invention.
                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Use of angiostatin fragments or aggregates - for inhibiting endothelial cell proliferation and treating angiogenesis-mediated diseases, e.g. cancer, arthritis or diabetic retinopathy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  08-MAR-1996;
26-APR-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9635774-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              angiostatin; plasminogen; kringle; angiogenesis; cancer; arthritis;
macular degeneration; diabetic retinopathy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human kringle 1-4BKLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAW07579;
                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention relates to new methods and compositions for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 4; Page 140-141; 203pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1996-518662/51.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26-APR-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-NOV-1996
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                                                                                                                                                                                                                                              282
                                                                                                                                                                                             61 GPWCFTTDPSIRWEYCNLTRCSDTEGTVV 89
                                                                                                                                                                                                                                                                                                               73;
                                                                                                                                                                                                                                                                             1 VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADT
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                                                                                                                                                                                                                                              VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPDADK 341
                                                                                                                                                                            GPWCFTTDPSVRWEYCNLKKCSGTEASVV
                                                                                                                                                                                                                                                                                                                                                                                        378
                                                                                                                                                                                                                                                                                                                   Conservative
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95US-0429743.
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                                                                                                                                                                                                                                                                                                                                   84.9%;
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                                                                                                                                                                                                                                                                                                                 Score 444; DB 17; I
Pred. No. 2.9e-37;
                                                                                                                                                                                                                                                                                                                   7;
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                                                                                                                                                                                                                                                                                                                                                      Length 378;
                                                                                                                                                                                                                                                                                                                       Indels
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AAM48894
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                                                                                                                                                                                                                                                                                                                                           RESULT 12
                                                                                                                                                                                                                                                                                                                                                                     This invention relates to angiogenesis-inhibiting protein receptors, and the DNA sequences encoding them. Angiogenesis is the generation of new clood vessels into a tissue, and normally occurs in wound healing, cc foetal and embryonal development and the formation of the corpus luteum, endometrium and placenta. Angiostatin is a protein (see AAB16450 and cc AAA68202) involved in angiogenesis, and has an amino acid sequence cc similar to that of a plasminogen fragment (see murine plasminogen (cc AAB16490). Angiostatin has the ability to inhibit angiogenesis. Cc Endostatin is also an angiogenesis inhibiting protein (see AAB16451 and Cc AAA68203). Sequences AAA68242 and AAB16522 represent coding and protein cs sequences of human laminin. Laminin is an angiostatin binding protein cc and some of the peptides of the invention share homology with regions of ca angiogenesis-inhibiting protein receptor fragments of the invention. The peptides habl6452-B16521 (excluding AAB16490) are the cc angiogenesis-inhibiting protein receptor fragments of the invention. The such as solid tumours, psoriasis, scleroderma, mycaradial angiogenesis, crobesis, diabetic retinopathy, arthritis, wound healing, peptic ulcers, Cc rubeosis, diabetic retinopathy, arthritis, wound healing, peptic ulcers, Cc fever. They are useful for the detection and prognosis of cancer. DNA sequences A628204-A628241 encode the peptides of the invention.
                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Angiogenesis-inhibiting protein receptor; angiogenesis; angiostatin; endostatin; plasminogen; laminin; treatment; wound healing; solid tu psoriasis; scleroderma; myocardial angiogenesis; Crohn's disease; cerebral collateral; arteriovenous malformation; rubeosis; cancer; diabetic retinopathy; arthritis; wound healing; peptic ulcer; Helicobacter related disease; fracture; cat scratch fever.
                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New angiogenesis-inhibiting protein receptors, useful in methods for treating diseases and processes that are mediated by angiogenesis, su as solid tumours, psoriasis, scleroderma and myocardial angiogenesis
                   AAM48894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Figure 2; 100pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-412290/35.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MacDonald NJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-DEC-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human angiostatin protein sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (ENTR-) ENTREMED INC.
                                                                                                              342
                                                                                                                                                                                       282
                                                                                                                                                  61
                                                                                                                                                                                                                                                                73;
                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                  GPWCFTTDPSIRWEYCNLTRCSDTEGTVV
                                                                                                                                                                                                             VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMMYCRNPDADT 60
                   standard;
                                                                                                                                                                                     VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPDADK
                                                                                                              GPWCFTTDPSVRWEYCNLKKCSGTEASVV 370
                                                                                                                                                                                                                                                                                                                                           378 AA;
                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0206059.
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                   Protein;
                                                                                                                                                                                                                                                                                84.9%;
                                                                                                                                                                                                                                                                7;
                                                                                                                                                                                                                                                            Score 444; DB 21;
Pred. No. 2.9e-37;
7; Mismatches 9;
                                                                                                                                                    89
                                                                                                                                                                                                                                                                9;
                                                                                                                                                                                                                                                                                                    Length 378;
                                                                                                                                                                                                                                                              Indels
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RESULT 13
AAY02105
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AC AAY02
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AC AAY02
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DT 16-JU
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                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                  The present invention relates to methods of regulating angiogenesis in individual by administering an angiogenesis regulating composition comprising a tropomyosin binding compound or an actin disrupting compound. The compositions are useful for treating diseases and process mediated by angiogenesis including haemangioma, solid tumours, blood bourne tumours, leukaemia, metastasis, Crohn's disease, coronary or cerebration, wound healing, Helicobacter related diseases, ovulation, menstruation, and cat scratch fever. The present sequence is a protein described in the exemplification of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human; angiostatin; endostatin; angiogenesis; cancer; metastasis; psoriasis; scleroderma; Crohn's disease; corneal disease; periasis; stringathy; arthritis; wound healing; Helicobacter pylori; peptic ulcer; gene therapy; angiostatin antagonist; endostatin antagonist; antiangiogenic; cytostatic; antiarthritic; antiinflammatory; cerebroprotective; antidibetic; virucide; antipyretic; vulnerary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               diseases, e.g. hemangioma, tumors or cancer, by administer tropomyosin binding compound or actin disrupting compound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Regulating angiogenesis and treatment of angiogenesis-mediated diseases, e.g. hemangioma, tumors or cancer, by administering
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sim
                                         16-JUL-1999
                                                                                                    AAY02105
                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Fig 2; 95pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2002-130569/17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-JUN-2000;
08-MAY-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               04-JUN-2001; 2001WO-US17947.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13-DEC-2001.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gynaecological; cat scratch fever.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human angiostatin protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      04-APR-2002
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                                                                                                                                                                                                                                                                                                               Local
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                                                                                                                                                                               342
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                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MacDonald NJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ENTREMED INC.
                                                                                                      standard; Protein; 380
                                                                                                                                                                             GPWCFTTDPSVRWEYCNLXKCSGTEASVV 370
                                                                                                                                                                                                          GPWCFTTDPSIRWEYCNLTRCSDTEGTVV 89
                                                                                                                                                                                                                                     VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTWNYCRNPDADK 341
                                                                                                                                                                                                                                                                  VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADT 60
                                                                                                                                                                                                                                                                                                                                                           378 AA;
                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000US-209065P.
2001US-289387P.
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                                           (first entry)
                                                                                                                                                                                                                                                                                                              84.9%;
                                                                                                                                                                                                                                                                                                7; Mismatches
                                                                                                                                                                                                                                                                                                               Score 444; DB 23;
Pred. No. 2.9e-37;
                                                                                                                                                                                                                                                                                                                            23;
                                                                                                                                                                                                                                                                                                 9;
                                                                                                                                                                                                                                                                                                                             Length 378;
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A multifunctional protein of the

invention

Angiostatin; endostatin; interferon; thrombospondin;

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RESULT 14
AAWS1457
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    interferon-inducible protein and platelet factor 4, and have anti-anglogenic and/or anti-tumor activity. The multifunctional protein may exhibit useful properties such as having similar or greater biological activity when compared to a single factor or by having improved half-life or decreased adverse side effects, or a combination of these properties. The proteins can be used for treating an angiogenic-mediated disease, e.g. cancer, diabetic retinopathy, macular degeneration, or arthritis. They can also be used for inhibiting the production of tumor cells (characteristic of lung, breast, ovarian, prostate, pancreatic, gastric, colon, renal, bladder cancers; melanoma, hepstoma, sercoma and lymphoma) in a patient and for inhibiting tumor the production of the production of the production and the production of the production of the patient and for inhibiting tumor cancers and lymphoma) in a patient and for inhibiting tumor the production of the productio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         interferon-inducible protein; platelet factor 4; anti-angiogenic;
anti-tumor; multifunctional protein; angiogenic-mediated disease;
cancer; diabetic retinopathy; macular degeneration; arthritis;
                   Human plasminogen; neovascularisation; angiostatin; inhibition; elastase; Sepharose.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                growth. Trinvention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The specification describes multifunctional proteins which comprise combinations of angiostatin, endostatin, interferon, thrombospondin,
                                                                                                                                        02-SEP-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hepatoma, sarcoma and lymphoma, ... _ _____
growth. The present sequence represents a multifunctional
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 5; Page 100-101; 121pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New multifunctional proteins useful for treating angiogenic-mediated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 1999-255098/21
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                                                                                                                                                                                      AAW51457
                                                                                                                                                                                                                               AAW51457 standard; protein; 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (SEAR ) SEARLE & CO G D
                                                                                                                                                                                                                                                                                                                                                       344
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                                                                                       plasminogen
                                                                                                                                                                                                                                                                                                                                                                                                  <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 VRQCYHGNGQSYRGTESTTVTGRTCQSWSSMTEHRHQRTPENYFNDGLTMNYCRNPDADT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                             GPWCFTTDPSIRWEYCNLTRCSDTEGTVV
                                                                                                                                                                                                                                                                                                                                                                                                                                              GPWCFTTDPSVRWEYCNLKKCSGTEASVV 372
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     380 AA;
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                                                                                                                                        (first
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                                                                                          fragment with neovascularisation inhibiting activity.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 444; DB 20;
Pred. No. 2.9e-37;
7; Mismatches 9;
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GPWCFTTDPSIRWEYCNLTRCSDTEGTVV

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GPWCFTTDPSVRWEYCNLKKCSGTEASVV

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Matches 73
                                                                                                                                                                                                            The invention relates to a neovascularisation inhibitor which comprises amino acids 355-791 of human plasminogen. Also claimed are a method for the preparation of angiostatin, and angiostatin prepared by this method. The human plasminogen protein fragment is prepared by: (a) applying human plasminogen to a lysine Sepharose column to separate it into plasminogen form 1 and form 2; (b) separating plasminogen form 1 and form 2 and digesting them with elastase; (c) fractionating the elastase-decomposed product of form 1 plasminogen and form 2 plasminogen in a lysine sepharose column; (d) collecting the factions bound to the lysine sepharose column; (e) further fractionating the form 2 plasminogen using an Aminohexal Sepharose column; and (f) collecting the fraction bound to the Aminohexal Sepharose column. This human plasminogen fragment can be used to inhibit growth of vascular endothelial cells. The present sequence represents amino acids 355-791 of human plasminogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human plasminogen derived polypeptide - has neovascularisation inhibiting activity
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                      VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYFNDGLTMNYCRNFDADT
VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPDADK
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                                                                                    Score 444; DB 19
Pred. No. 3.4e-37
7; Mismatches
                                                                                                                              19;
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RESULT 15
AAY79224
   The present sequence represents an angiogenesis inhibitor obtained by cleavage of human plasminogen with make venom K4 protease from spitting cobra (Naja nigricollis nigricollis). The K4 protease cleaves the plasminogen following amino acid residue 452, producing an angiogenesis inhibitor with little or no disruption of the first 4 plasminogen kringles. Further, preferred angiogenesis inhibitors of the invention are obtained by plasmin cleavage of this K4 protease-cleaved plasminogen fragment (see ANY79225 and ANY79226). angiogenesis inhibitors are used for inhibiting tumour growth in a mammal, preferrably human. They are useful for treating
mammal, preferably human. They are useful for treating angiogenesis-associated diseases such as: solid tumours, prostate cancer, breast cancer, colon cancer and lung cancer (claimed); blood-borne tumors such as leukaemia; metastasis; benign tumours; rheumatoid arthritis; psoriasis; ocular angiogenic diseases; myocardial angiogenesis; plaque neovascularization; telangiectasia; haemophiliac joints; anglofibroma; wound granulation; excessive or abnormal stimulation of endothelial cells; and as birth control
                                                                                                                                                                                                                                                                                                    Claim 14; Fig 8; 72pp; English.
                                                                                                                                                                                                                                                                                                                                New angiogenesis inhibitors useful for treating solid tumors, leukemias, tumor metastasis, benign tumor, rheumatoid arthritis, psoriasis and ocular angiogenic diseases
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Angiogenesis inhibitor; plasminogen; human; K4 protease; snake venom; cobra; Naja nigricollis nigricollis; metastatic; cytostatic; antitumour; tumour; prostate cancer; breast cancer; colon cancer; lung cancer; leukaemia; metastasis; contraceptive;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Angiogenesis
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57..58
/note= "plasmin cleavage site"
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                                                                                                                                                                                                agents by preventing vascularization required for embryo implantation. The inhibitors are administered also to extend the dormancy of micrometastases and to stabilize any residual primary
                                                                                                                       Local
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            61 GPWCFTTDPSIRWEYCNLTRCSDTEGTVV 89
                                                                   1 VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYFNDGLTMNYCRNPDADT 60
                                                                                                                       Similarity
GPWCFTTDPSVRWEYCNLKKCSGTEASVV 443
                                                 VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLIWNYCRNPDADK 414
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                                                                                                         Conservative
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Pred. No. 3.5e-37
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                                                                                                                                                                                                                                                                  US-09-751-708A-126
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          Sequence 126, App
Sequence 42, Appl
Sequence 8, Appli
Sequence 4, Appli
Sequence 6, Appli
Sequence 1, Appli
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76.5	76.5	76.5	76.5	76.5	76.5	76.5	76.5	76.5	76.5	76.5	76.5	77.2	78.8	79.0		79.7	79.7	79.7	79.7	79.7	79.7	80.7	80.7	80.7	80.7	83.2	84.9	84.9	84.9
812	812	812	812	812	812	459	459	378	378	378	378	359	364	451	78	78	78	78	78	78	78	352	352	352	352	363	810	810	810
15	12	10	9	9	9	12	9	15	12	10	9	12	15	15	15	12	12	12	10	9	9	15	12	5	9	12	15	12	9
US-10-131-241-1	US-10-402-364-1	US-09-335-325-1	US-09-873-676-81	US-09-761-120-1	US-09-788-142-1	US-10-402-364-46	US-09-761-120-46	US-10-131-241-41	US-10-402-364-41	US-09-335-325-41	US-09-761-120-41	US-10-292-418-40	-10-157-369-	-69	US-10-131-241-23	US-10-402-364-52	US-10-402-364-23	US-10-267-137-9	US-09-335-325-23	US-09-761-120-23	US-09-753-064-5	US-10-131-241-40	-10-402-364	US-09-335-325-40	09-761-120-4	US-10-292-418-11	US-10-193-656-2	US-10-237-144-1	US-09-946-893-2
1,	۲	e 1,	81	1, ,	Sequence 1, Appli	e 46	46,	Sequence 41, Appl	41	e 41	41,	40	4,	<u>ب</u>	23	52,	23,	Sequence 9, Appli	e 23,	23,	Sequence 5, Appli	4	40,	Sequence 40, Appl	Sequence 40, Appl	11	Ņ	e 1,	Sequence 2, Appli

### ALIGNMENTS

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TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATMENT OF NEOPLASTIC DISEASE FILE REFERENCE: 870759
CURRENT APPLICATION NUMBER: US/09/870,759
CURRENT FILING DATE: 2002-01-14
PRIOR APPLICATION NUMBER: US 60/208,128
PRIOR FILING DATE: 2000-05-30
NUMBER OF SEQ ID NOS: 166
SOFTWARE: Patentin version 3.1
SEQ ID NO 126
LENGTH.
RESULT 2
US-09-751-708A-126
; Sequence 126, Application US/09751708A
; Publication No. US20030157113A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                         ; LENGTH: 1169
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-870-759-126
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Best Local S
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                                                                                                                                  802 GPWCFTMDPSIRWEYCNLTRCSDTEGTVV 830
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                                                                                                                                                          61 GPWCFTTDPSIRWEYCNLTRCSDTEGTVV 89
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                                                                                                                                                                                                                                                                                 88; Conservative
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Similarity 98.9%;
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Pred. No. 9e-49;
0; Mismatches
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US-09-761-120-42
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Patent No. US20020037847A1
GENERAL INFORMATION:
APPLICANT: Folkman, M. Judah
APPLICANT: Folkman, M. Judah
APPLICANT: O'Reilly, Michael
TITLE OF INVENTION: Nucleic Acids Encoding Kringle 1-5 Region Fragments of Plasminoge
FILE REFERENCE: 05940-0151 (43171-252068)
CURRENT APPLICATION NUMBER: US/09/761,120
CURRENT FILING DATE: 2001-01-16
PRIOR APPLICATION NUMBER: 09/309,821
PRIOR APPLICATION NUMBER: 09/309,821
PRIOR APPLICATION NUMBER: 08/866,735
PRIOR FILING DATE: 1999-05-31
PRIOR FILING DATE: 1997-05-30
NUMBER OF SEQ ID NOS: 47
OCCUPANCE DESCRIPTION OF SEQ ID NOS: 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/09/751,708A CURRENT FILING DATE: 2002-10-15 PRIOR APPLICATION NUMBER: US 60/173,371 PRIOR FILING DATE: 1999-12-28 NUMBER OF SEQ ID NOS: 166 SOFTWARE: Patentin version 3.1 SEQ ID NO 126 LENGTH: 1169
Sequence 42, Application US/10402364
Publication No. US20040002459A1
GENERAL INFORMATION:
APPLICANT: O'Reilly, Michael
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: PatentIn version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILE REFERENCE: 751708
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 368
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc_feature
OTHER INFORMATION: Kringle 1-4 BKLS
                                                                                                                                                                                                                                                                                                                        Match 85.5%;
Local Similarity 82.0%;
                                                                                                                                                       332
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Pred. No. 1.5e-41;
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Pred. No. 9e-49;
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                                                                                                                                                                                                                                                                                                          8;
                                                                                                                                                                                                                                                                                                                                           Length 368;
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APPLICANT: MacDonald, Nicholas J.
APPLICANT: Sim, Kim L.
APPLICANT: Sim, Kim L.
TITLE OF INVENTION: Angiostatin and Endostatin Binding Proteins and Methods of Use
FILE REFERENCE: 05213-0378 (43170-259333)
CURRENT APPLICATION NUMBER: US/09/873,676
CURRENT FILING DATE: 2001-06-04
PRIOR APPLICATION NUMBER: US 60/209,065
PRIOR APPLICATION NUMBER: US 60/209,065
PRIOR FILING DATE: 2001-05-08
PRIOR FILING DATE: 2001-05-08
NUMBER OF SEQ ID NOS: 123
NUMBER OF SEQ ID NOS: 123
                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn version 3.1
SEQ ID NO 1
LENGTH: 378
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SEQ ID NO 42
LENGTH: 368
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Best Local S
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TITLE OF INVENTION: Nucleic Acids Encoding Kringle 1-5 Region Fragments of Plasminoger FILE REFERENCE: 05213-2151 (43170-252068)
CURRENT APPLICATION NUMBER: US/10/402,364
CURRENT FILING DATE: 2003-03-28
PRIOR FILING DATE: 2001-01-16
PRIOR PRIOR PRIOR DATE: 2001-01-16
PRIOR APPLICATION NUMBER: 09/309,821
PRIOR APPLICATION NUMBER: 09/309,821
PRIOR APPLICATION NUMBER: 08/866,735
PRIOR APPLICATION NUMBER: 08/866,735
PRIOR FILING DATE: 1999-05-11
PRIOR APPLICATION NUMBER: 08/866,735
PRIOR FILING DATE: 1997-05-30
NUMBER OF SEQ ID NOS: 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Homo sapiens FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc_feature
OTHER INFORMATION: Kringle 1-4 BKLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: PRT
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                                                                                                                                                                                       Local
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342 GPWCFTTDPSVRWEYCNLKKCSGTEASVV 370
                                                                                282 VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPDADK 341
                     61 GPWCFTTDPSIRWEYCNLTRCSDTEGTVV 89
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                                                                                                        Similarity
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Pred. No. 3.4e-41;
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Pred. No. 1.5e-41;
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RESULT 6 US-09-335-325-42

Sequence 42, Application US/09335325

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                                                                             Sequence 42, Application US/10131241 Publication No. US20030012792A1 GENERAL INFORMATION:
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GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
APPLICANT: Holaday, John W.
APPLICANT: Fortier, Anne H.
TITLE OF INVENTION: Compositions and Methods for Inhibiting Endothelial Cell Prolifer
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INFORMATION FOR SEQ ID NO: 42:
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PPLICATION NUMBER: US/08/612,788

PILING DATE: «Unknown»

ATTORNEY/AGENT INFORMATION:

NAME: Warren, William L.

REGISTRATION NUMBER: 36,714

REFERENCE/DOCKET NUMBER: 05213-0126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/335,325
FILING DATE: 17-Jun-1999
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FRAGMENT TYPE: N-terminal ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION: TELEPHONE: 404-818-3700
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE DESCRIPTION: SEQ ID NO: 42:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IMMEDIATE SOURCE:
CLONE: K1-4E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY: linear MOLECULE TYPE: protein
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                                                                                                                                                                                                                                           342
                                                                                                                                                                                                                                                                                                                                  282 VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPDADK 341
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                                                                                                                                                                                                                                                                                   GPWCFTTDPSIRWEYCNLTRCSDTEGTVV 89
                                                                                                                                                                                                                                           GPWCFTTDPSVRWEYCNLKKCSGTEASVV 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Homo sapiens
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TYPE: amino acid
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
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                                                                                                                                                                                                                                                                                                                                                                                                                                              84.9%; Score 444; DB 10; Length 378; 82.0%; Pred. No. 3.4e-41;
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Sequence 8, Application US/10304287 Publication No. US20030083234A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                         SEQ ID NO 7
LENGTH: 391
TYPE: PRT
ORGANISM: mammalian
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Best Local S
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT FILING DATE: 2002-11-26
PRIOR APPLICATION NUMBER: US 60/333,866
PRIOR FILING DATE: 2001-11-28
NUMBER OF SEQ ID NOS: 8
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: Anti-angiogenesis methods, compositions and uses therefor FILE REFERENCE: ME02-001
CURRENT APPLICATION NUMBER: US/10/304,287
CURRENT FILING DATE: 2002-11-26
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PRIOR FILING DATE: 1999-05-21
PRIOR APPLICATION NUMBER: US 60/086,586
PRIOR FILING DATE: 1998-05-22
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ORGANISM: Homo sapiens
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Similarity 82.0%;
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Pred. No. 3.5e-41;
7; Mismatches 9;
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Pred. No. 3.4e-41;
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APPLICANT: Waisman, David M. APPLICANT: Kwon, Mijung TITLE OF INVENTION: Anti-angiogenesis methods, compositions and uses therefor

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US-10-304-287-8
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US-09-946-893-4
Sequence 5, Application US/09946893
Patent No. US20020072494A1
GENERAL INFORMATION:
APPLICANT: Cao, Yihai
TITLE OF INVENTION: Materials and methods relating to endothelial cell growth
TITLE OF INVENTION: inhibitors
FILE REFERENCE: Mewburn
CURRENT APPLICATION NUMBER: US/09/946,893
CURRENT FILING DATE: 2001-09-05
PRIOR APPLICATION NUMBER: US 60/230,893
PRIOR APPLICATION NUMBER: US 60/230,893
PRIOR FILING DATE: 2000-09-05
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Patent No. US20020072494A1
GENERAL INFORMATION:
APPLICANT: Cao, Yihai
TITLE OF INVENTION: Materials and methods relating to endothelial cell
TITLE OF INVENTION: inhibitors
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SEQ ID NO 8
LENGTH: 394
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Best Local Similarity 82.0%;
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CURRENT FILING DATE: 2002-11-26
PRIOR APPLICATION NUMBER: US 60/333,866
PRIOR FILING DATE: 2001-11-28
NUMBER OF SEQ ID NOS: 8
CORRUSTO SEG ID NOS: 8
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PRIOR FILING DATE: 2000-09-05
NUMBER OF SEQ ID NOS: 11
SOFTWARE: Patentin Ver. 2.1
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CURRENT FILING DATE: 2001-09-05
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TYPE: PRT
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nilarity 82.0%;
Conservative
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Pred. No. 4.2e-41;
7; Mismatches 9
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Pred. No. 3.6e-41;
7; Mismatches 9
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CURRENT FILING DATE: 2001-09-05
PRIOR APPLICATION NUMBER: US 60/230,893
PRIOR FILING DATE: 2000-09-05
NUMBER OF SEQ ID NOS: 11
SOPTWARE: Patentin Ver. 2.1
SEQ ID NO 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 8, Application US/09946893 Patent No. US20020072494A1 GENERAL INFORMATION:
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SOFTWARE: PATENTIN VET. 2.1
SEQ ID NO 5
LENGTH: 569
GENERAL INFORMATION:
APPLICANT: Cao, Yihai
TITLE OF INVENTION: Materials and methods relating to endothelial cell growth
TITLE OF INVENTION: inhibitors
FILE REFERENCE: Mewburn
                                                                                                    Sequence 6, Application US/09946893
Patent No. US20020072494A1
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Best Local Similarity
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TITLE OF INVENTION: Materials and methods relating to endothelial cell growth
TITLE OF INVENTION: inhibitors
FILE REFERENCE: Mewburn
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Pred. No. 5.3e-41;
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Pred. No. 5.4e-41;
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CURRENT APPLICATION NUMBER: US/09/946,893
CURRENT FILING DATE: 2001-09-05
PRIOR APPLICATION NUMBER: US 60/230,893

PRIOR FILING DATE: 2000-09-05

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CURRENT APPLICATION NUMBER: US/09/967,386
CURRENT FILING DATE: 2001-09-26
PRIOR APPLICATION NUMBER: US 60/236,550
PRIOR FILING DATE: 2000-09-29
NUMBER OF SEQ ID NOS: 7
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 1
LENGTH: 791
TYPE: PRT
ORGANISM: Homo sapiens
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US-09-967-386-1
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Sequence 1, Application US/10304287
Publication No. US20030083234A1
GENERAL INFORMATION:
APPLICANT: Waisman, David M.
APPLICANT: Kwon, Mijung
TITLE OF INVENTION: Anti-angiogenesis methods, compositions and uses therefor
FILE REFERENCE: ME02-001
CURRENT APPLICATION NUMBER: US/10/304,287
CURRENT FILING DATE: 2002-11-26
PRIOR APPLICATION NUMBER: US 60/333,866
PRIOR FILING DATE: 2001-11-28
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SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 6
LENGTH: 576
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
APPLICANT: Abbott Laboratories
APPLICANT: Henkin, Jack
APPLICANT: Davidson, Donald J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1, Application US/09967386 Patent No. US20020159992A1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILE REFERENCE: 6738.US.02
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SOFTWARE: Microsoft Word
SEQ ID NO 1
LENGTH: 791
TYPE: PRT
ORGANISM: mammalian
                                                                                                                                                                                              US-10-304-287-1
                                                                                                                            Query Match 84.9
Best Local Similarity 82.0
Matches 73; Conservative
                                                    355 VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPDADK 414
415 GPWCFTTDPSVRWEYCNLKKCSGTEASVV 443
                61 GPWCFTTDPSIRWEYCNLTRCSDTEGTVV.89
                                                                                    1 VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADT 60
                                                                                                                                             84.9%;
                                                                                                                            Score 444; DB 15;
Pred. No. 7.6e-41;
7; Mismatches 9;
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Search completed: January 12, 2004, 17:29:39 Job time : 26.0977 secs

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Minimum
Maximum
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Maximum Match 100%
Listing first 45 summaries
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1: /cgn2_6/ptodata/1/laa/5A_COMB.pep:*
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3: /cgn2_6/ptodata/1/laa/6B_COMB.pep:*
4: /cgn2_6/ptodata/1/laa/6B_COMB.pep:*
5: /cgn2_6/ptodata/1/laa/PCTUS_COMB.pep:*
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   GenCore version 5.1.6 (c) 1993 - 2004 Compugen Ltd.
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US-09-377-250-3
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US-08-612-788-42
US-09-066-028-42
US-09-355-325-42
US-09-335-325-42
US-09-377-250-1
US-09-377-250-1
US-08-469-466-54
US-08-469-466-54
US-08-643-219-1
US-08-832-0879-1
US-08-831-350-1
US-08-851-350-1
US-08-991-761A-1
US-08-991-761A-1
US-09-136-514-1
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US-09-136-514-1
US-09-348-953-2
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US-09-066-028-40
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                                                                                                  Sequence 1
Sequence 5
Patent No.
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RESULT 2 US-09-377-250-2 ; Sequence 2, Application US/09377250 ; Patent No. 6365364 ; CENERAL INFORMATION:	Qy 61 GPWCFTTDPSIRWEYCNLTRCSDTEGTVV 89	OY 1 VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADT 60	Query Match 84.9%; Score 444; DB 4; Length 374; Best Local Similarity 82.0%; Pred. No. 1.8e-42; Matches 73; Conservative 7; Mismatches 9; Indels 0; Gaps	; NAME/KEY: MOD RES ; LOCATION: (264) ; OTHER INFORMATION: Xaa = Gln or Glu US-09-377-250-3	; TYPE: PKT ; ORGANISM: Homo sapiens ; FEATURE: ; OTHER INFORMATION: angiogenesis inhibitor : FEATURE:	; SEQ ID NO 3 ; LENGTH: 374	THE REFEURRENT AURRENT FUMBER OF	; GENERAL INFORMATION: ; APPLICANT: MANN, KENNETH G. ; APPLICANT: SWORDS JENNY, NANCY ; TITLE OF INVENTION: ANGIOGENESIS INHIBITORS AND USERS THEREOF	RESULT 1 US-09-377-250-3 , Sequence 3, Application US/09377250	ALIGNMENTS	4 400 76.5 812 2 US-08-605-598B-1 Sequence 1, Appl	2 400 76.5 812 1 US-08-452-260-1 Sequence 1, 3 400 76.5 812 1 US-08-326-785-1 Sequence 1,	0 400 76.5 812 1 US-08-248-622A-1 Sequence 1, 1 400 76.5 812 1 US-08-451-932-1 Sequence 1,	7 400 76.5 378 3 US-09-066-028-41 Sequence 41 8 400 76.5 378 4 US-09-35-325-41 Sequence 2	5 401 76.5 378 2 US-08-612-788-41 Sequence 41 6400 76.5 378 2 US-08-612-788-41	128-23 Sequence 23, App 128-23 Sequence 23, App 125-23 Sequence 23, App	9 421 80.5 130 4 US-08-240-839-4 Sequence 4, 0 417 79.7 78 2 US-08-612-788-23 Sequence 23 1 417 70.7 78 2 US-08-612-5284-5 Sequence 3	8 421 80.5 120 1 US-08-211-747-7 Sequence 7, Appl
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APPLICANT: MANN, KENNETH G.
APPLICANT: SWORDS JENY, NANCY
APPLICANT: SWORDS JENY, NANCY
TITLE OF INVENTION: ANGIOGENESIS INHIBITORS AND USERS THEREOF
FILE REFERENCE: 48409/360
CURRENT FAPLICATION NUMBER: US/09/377,250
CURRENT FILLING DATE: 1999-08-19
NUMBER OF SEQ ID NOS: 5

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; FEATURE:
, NAME/KEY: MOD RES
; LOCATION: (265)
; OTHER INFORMATION: Xaa = Gln or Glu
US-09-377-250-2
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LENGTH: 37
TYPE: PRT
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Best Local Similarity 82.0%;
Matches 73; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                TELEFAX: 404-818-3799
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 378 amino acid
                              MOLECULE TYPE: p
HYPOTHETICAL: NO
ANTI-SENSE: NO
FRAGMENT TYPE: N
ORIGINAL SOURCE:
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
OTHER INFORMATION: anglogenesis inhibitor
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                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: 1BM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOPTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
UKGANISM: Homo sapiens
IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION: TELEPHONE: 404-818-3700
                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: Atlanta
                                                                                                                                                                                                                                                                                            REGISTRATION NUMBER: 36,714
REFERENCE/DOCKET NUMBER: 05213-0126
                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY: U.S. ZIP: 30303-1769
                                                                                                                               TOPOLOGY:
                                                                                                                                            STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            278 VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPDADK 337
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                                                                                                                                                                                                                                                                                                                                  Warren, William
                                                                                                                                                                 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INVENTION: Angiostatin Fragments and Method of Use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Georgia
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           191 Peachtree Street,
                                                                                                                                                                                    378 amino acids
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Sim, B. Kim Lee
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                                                                                       .. protein
                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Jones & Askew
                                                        N-terminal
                                                                                                                                                                                                                                                                                                                                                                        514
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             37th Floor
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US-08-612-788-42
Query Match
Best Local Similarity
Watches 73; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-066-028-42
                                                                                US-09-066-028-42
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Best Local Similarity 84...
Thes 73; Conservative
                                                                                                             FRAGMENT TYPE: Noterminal ORIGINAL SOURCE:
ORGANISM: Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: Folkman, M. Judah
                                                                                                                                                                                                                                                                            TELEFAX: 404-818-3799
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 378 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: Warren, William L.
REGISTRATION NUMBER: 36,714
REFERENCE/DOCKET NUMBER: 05
                                                                                               IMMEDIATE SOURCE: CLONE: K1-4BKLS
                                                                                                                                                                                            MOLECULE TYPE: protein HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Cao, Yihai
APPLICANT: Sim, B. Kim Lee
                                                                                                                                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: Atlanta
                                                                                                                                                                                                                                                           LENGTH: 378 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
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6024688
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Y: U.S.
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                                                                                                                                                                                                                              linear
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                              84.9%;
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Pred. No. 1.8e-42;
7; Mismatches 9
                 Score 444; DB 3;
Pred. No. 1.8e-42,
7; Mismatches (
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                                               Length 378,
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RESULT 6
US-09-335-325-42
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US-09-206-059-1
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APPLICANT: MacDonald, Nicholas
APPLICANT: Sim, Kim Lee
APPLICANT: Sim, Kim Lee
TITLE OF INVENTION: Angiogenesis-Inhibiting Protein Binding Peptides and
TITLE OF INVENTION: Proteins and Methods of Use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 42, Application US/09335325
Patent No. 6521439
GENERAL INFORMATION:
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Patent No. 6201104
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILE REFERENCE: 05213-0370
CURRENT APPLICATION NUMBER: US/09/206,059
CURRENT FILING DATE: 1998-12-04
NUMBER OF SEQ ID NOS: 80
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 378
COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Ver
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/99/335,325
FILING DATE: 17-Jun-199
CLASSIFICATION: cUnknown>
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: US/08/612,788
FILING DATE: <UNKnown>
ATTORNEY/AGENT INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cao, Yihai
Sim, B. Kim Lee
TITLE OF INVENTION: Angiostatin Fragments and Method of Use
NUMBER OF SEQUENCES: 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Folkman, M. Judah
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                                                                                                                                                                                                                                                                                                                                        STATE: Georgia
                                                                                                                                                                                                                                                                                                                                                           CITY: Atlanta
                                                                                                                                                                                                                                                                                                                                                                                    STREET: 191 Peachtree Street, 37th Floor
                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              O'Reilly, Micheal
                                                                                                                                                                                                                                                                                                                                                                                                           Jones & Askew
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Pred. No. 1.8e-42;
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                                                                                                                                                          US-09-377-250-1
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                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/09/377,250
CURRENT FILING DATE: 1999-08-19
NUMBER OF SEQ ID NOS: 5
SOFTWARE: PATENTIN Ver. 2.0
SEQ ID NO 1
LENGTH: 451
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
APPLICANT: MANN, KENNETH G.
APPLICANT: SWORDS JENNY, NANCY
APPLICANT: SWORDS JENNY, NANCY
TITLE OF INVENTION: ANGIOGENESIS INHIBITORS AND USERS THEREOF
FILE REFERENCE: 48409/360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1, Application US/09377250 Patent No. 6365364
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                                                                                                                                                                          NAME/KEY: MOD_RES
LOCATION: (341)
OTHER INFORMATION: Xaa = Gln or Glu
                                                                                                                                                                                                                                                  NAME/KEY: MOD_RES
LOCATION: (53)
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                   ORGANISM: Homo sapiens
FEATURE:
OTHER INFORMATION: plasminogen fragment
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INFORMATION FOR SEQ ID NO: 42:
SEQUENCE CHARACTERISTICS:
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                                                                                                Local
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RECISTRATION NUMBER: 36,714
REFERENCE/DOCKET NUMBER: 05:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS: <Unknown>
TOPOLOGY: linear
MOLECULE TYPE: protein
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  354 VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPDADK 413
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                    1 VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADT 60
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                                                                                                Similarity
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TYPE: amino acid
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                                                                                              84.9%;
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                                                                                                                                                                                                                                                         Gln or Glu
                                                                            Score 444; DB 4; Length 451; Pred. No. 2.2e-42; 7; Mismatches 9; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 444; DB 4; Length 378; Pred. No. 1.8e-42; 7; Mismatches 9; Indels
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GPWCFTTDPSIRWEYCNLTRCSDTEGTVV 89

GPWCFTTDPSVRWEYCNLKKCSGTEASVV 442

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US-09-377-250-4
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SOFTWARE: PALENTIN VET. 2.0
SEQ ID NO 4
LENGTH: 452
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                                                                                                                                                                                                                                                                                                                                                                                                           Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILE REFERENCE: 48409/360
CURRENT APPLICATION NUMBER: US/09/377,250
CURRENT FILING DATE: 1999-08-19
                                          ZIP: 02110-2804
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOPTWARE: Patentin Release ""
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: MANN, KENNETH G.
APPLICANT: SWORDS JENNY, NANCY
TITLE OF INVENTION: ANGIOGENESIS INHIBITORS AND USERS THEREOF
                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: MOD RES
LOCATION: (342)
OTHER INFORMATION: Xaa = Gln or Glu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: MOD RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OTHER INFORMATION: plasminogen fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                                                                          TITLE OF INVENTION: Improved TITLE OF INVENTION: proteins NUMBER OF SEQUENCES: 58
                 CURRENT APPLICATION DATA
                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
APPLICATION NUMBER: US/08/469,486
                                SOFTWARE:
                                                                                                                                                                                                    CITY: Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                       DDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       415 GPWCFTTDPSVRWEYCNLKKCSGTEASVV 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              355 VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPDADK 414
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  h 84.9%;
Similarity 82.0%;
                                                                                                                                                                                 Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                          Application US/08469486
                                                                                                                                                                                                                        225 Franklin Street
                                                                                                                                                                                                                                                                                                                                Etzerodt, Michael
                                                                                                                                                                                                                                                                                                                                                     Holtet, Thor
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                                                                                                                                                                                                                                                                                                                                                                    Thoegersen, Hans Christian
                                                    PatentIn Release #1.0, Version
                                                                                                                                                                                                                                       Fish & Richardson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Xaa = Gln
                                                                                                                                                                                                                                                                                                                  Improved method for the refolding of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          or Glu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 444; DB 4; Length 452; Pred. No. 2.2e-42;
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Best Local S
Matches 73
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Patent No. 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEX: 200154
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REGISTRATION NUMBER: 30,162
REFERENCE/DOCKET NUMBER: 06
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617,542,5070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE: February 4, ATTORNEY/AGENT INFORMATION: NAME: Paul T. Clark
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: Paul T. Clark
REGISTRATION NUMBER: 30,162
REFERENCE/DOCKET NUMBER: 06363/002002
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                           ZIP: 02110-2804
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 58
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Holtet, The APPLICANT: Etzerodt,
                                                                                                                                             CLASSIFICATION: 530 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                        CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
nes 73; Conserv
                                                                                                           APPLICATION NUMBER: 08/192,060 FILING DATE: February 4, 1994
                                                                                                                                                                                APPLICATION NUMBER: US/08 FILING DATE: June 5, 1995
                                                                                                                                                                                                                                   SOFTWARE: PatentIn Release #1.0, Version SOFTWARE: #1.25
                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                       CITY: Boston
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                 COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PELEPHONE: 61, 542 8906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ENGTH: 790 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      354 VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPDADK 413
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                                                                                                         February 4, 1994
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                                                                                                                                                                                                     US/08/469,658
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Pred. No. 4.4e-42;
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RESULT 11
US-08-643-219-1
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Best Local Similarity 82.0%;
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                                  Query Match
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INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                    INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 791 amino acid
TYPE: amino acid
                                                                                                                                                                                                                                     ATTORNEY AGENT INFORMATION:
NAME: Casuto, Dianne
REGISTRATION NUMBER: 40,943
REFERENCE/DOCKET NUMBER: 5940
TELECOMMUNICATION INFORMATION:
TELEPHONE: 847-938-3137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US
FILING DATE: 06-MAY-11
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ Version 2.0
CURRENT APPLICATION DATA:
                                                                                                      MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM: MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
ADDRESSES: Abbott Laboratories
STREET: 100 Abbott Park Road
CITY: Abbott Park
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE: protein
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Local Similarity 82.0
                                                                                                                      TOPOLOGY:
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                                                                                                                                                                                                                                                                                                                                                 FILING DATE
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                                                                                    DESCRIPTION:
                                                                                                                                                                                                                         TELEFAX:
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                                                                                                                                   amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GPWCFTTDPSIRWEYCNLTRCSDTEGTVV 89
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VENTION: NOVEL ANTIANGIOGENIC PEPTIDES

VENTION: AND METHODS FOR INHIBITING ANGIOGENESIS
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                                                                                protein
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              84.9%;
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                                                                                                                                                                                                                                                                           5940.US.P1
Score 444; DB 1; Length 791; Pred. No. 4.4e-42; 7; Mismatches 9; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 444; DB 2; Length 790; Pred. No. 4.4e-42;
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0,
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; DESCRIPTION:
US-09-131-995-1
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US-09-131-995-1
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Patent No. 5972896
GEMERAL INFORMATION:
APPLICANT: Davidson, Donald J.
                                                                                                                                   Matches
                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                      TELEX:
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                        REGISTRATION NUMBER: 40,943
REFERENCE/DOCKET NUMBER: 59
TELECOMMUNICATION INFORMATION:
TELEPHONE: 847-938-3137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ Version 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 60064
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
LENGTH: 791 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/832,(
FILING DATE: 03-APR-1997
APPLICATION NUMBER: 08/643,219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 14
CORRESPONDENCE ADDRESS:
ADDRESSEE: Abbott Laboratories
STREET: 100 Abbott Park Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 06-MAY-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                    TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: Abbott Park
STATE: IL
                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US/09/131,995
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                                                                                                                                                                                                                                                                                                                                                         TELEFAX: 847-938-2623
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415 GPWCFTTDPSVRWEYCNLKKCSGTEASVV 443
                                                                 355 VQDCYHGDGQSYRGTSSTTTTGKKCQSWSSMTPHRHQKTPENYPNAGLTMNYCRNPDADK 414
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                   61 GPWCFTTDPSIRWEYCNLTRCSDTEGTVV 89
                                                                                   1 VRQCYHGNGQSYRGTFSTTVTGRTCQSWSSMTPHRHQRTPENYPNDGLTMNYCRNPDADT 60
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                                                                                                                                   Conservative
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                                                                                                                                                   84.9%;
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                                                                                                                               Score 444; DB 2; 1
Pred. No. 4.4e-42;
7; Mismatches 9;
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                                                                                                                                                                   Length 791;
                                                                                                                                   Indels
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RESULT 13 US-08-832-087B-1

; Sequence 1, Application US/08832087B ; Patent No. 5981484

GENERAL INFORMATION:

APPLICANT: Davidson, Donald J.
TITLE OF INVENTION: NOVEL ANTIANGIOGENIC PEPTIDES
TITLE OF INVENTION: AND METHODS FOR INHIBITING ANGIOGENESIS

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, MOLECULE TYPE:
; DESCRIPTION: protein
US-08-832-087B-1
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Patent No. 6057122
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Best Local &
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                     NUMBER OF SEQUENCES: 38
CORRESPONDENCE ADDRESS:
ADDRESSEE: Abbott Laboratories
STREET: 100 Abbott Park Road
                                                                                                                                                                               APPLICANT: Abbott Laboratories
TITLE OF INVENTION: POLYBUCKETINGE SENCODING SAME AND METHODS
TITLE OF INVENTION: POLYBUCKETING ANGIOGENESIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REGISTRATION NUMBER: 40,943
REFERENCE/DOCKET NUMBER: 59
TELECOMMUNICATION INFORMATION:
TELEPHONE: 847-938-3137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 514
PRIOR APPLICATION DATE: 08/643,219
APPLICATION NUMBER: 08/643,219
FILLING DATE: 06-MAY-1996
ATTORNEY/AGENT INFORMATION:
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CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/832,
FILING DATE: 03-APR-1997
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MEDIUM TYPE: Diskett
COMPUTER: IBM Compat
OPERATING SYSTEM: DO
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CORRESPONDENCE ADDRESS:
ADDRESSE: Abbott Laboratories
STREET: 100 Abbott Park Road
CITY: Abbott Park
STATE: IL
COUNTRY: USA
ZIP: 60064-3500
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
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Similarity 82.0%;
73; Conservative
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; MOLECULE TYPE:
; DESCRIPTION:
US-08-851-350-1
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US-09-132-154-1
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Best Local S
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/832,08
FILING DATE: 03-APR-1997
APPLICATION NUMBER: 08/643,219
FILING DATE: 06-MAY-1996
ATTORNEY/AGENT INFORMATION:
NAME: Casuto, Dianne
REGISTRATION NUMBER: 40,943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Davids
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NAME: Casuto, Dianne
REGISTRATION NUMBER: 40,943
REFERENCE/DOCKET NUMBER: 5940
TELECOMMUNICATION INFORMATION:
TELEPHONE: 847-938-3337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/851,
FILING DATE: 05-MAY-10-
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PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
                                                                                                                                                                                     COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ Version 2.0
CURRENT APPLICATION DATA:
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CITY: Abbott Park
                                                                                                                                     CLASSIFICATION:
                                                                                                                                                                        APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                           COUNTRY: USA
ZIP: 60064
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TELEFAX: 847-938-2623
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82.0%;
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NOVEL ANTIANGIOGENIC PEPTIDES
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Pred. No. 4.4e-42;
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Result
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Perfect score:
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Maximum Match 100%
Listing first 45 summaries
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Maximum DB seq length: 200000000
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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Match
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1: pir1:*
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3: pir3:*
4: pir4:*
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508
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length DB
GenCore version 5.1.6 (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S00657
B30848
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            hepatocyte growth
plasmin precursor
neurotrophic recep
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thrombin (EC 3.4.2
                                                                                                                    hepatocyte growth plasmin (EC 3.4.21 hepatocyte growth hepatocyte growth plasmin (EC 3.4.21 thrombin (EC 3.4.2
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138	139.5	140	142	142.5	143	146	154	154	160	163.5	163.5	165.5	174.5	178.5	184
27.2	27.5	27.6	28.0	28.1	28.1	28.7	30.3	30.3	31.5	32.2	32.2	32.6	34.4	35.1	36.2
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S18932	\$45281	T18840	A48289	JC4795	UKMS	UKPG	A46688	A35029	A29941	A45082	JC5878	\$28941	A47299	KFHU12	A35827
u-plasminogen acti	coagulation factor	hypothetical prote	neurotrophic recep	plasma hyaluronan-	u-plasminogen acti	u-plasminogen acti	hepatocyte growth	t-plasminogen acti	t-plasminogen acti	neurotrophic recep	plasma hyaluronan-	coagulation factor	ror-related recept	coagulation factor	thrombin (EC 3.4.2

## ALIGNMENTS

A;Status: preliminary; translation not shown; translated from GB/EMBL/DDBJ A, Molecule type: DNA A, Molecule type: DNA A;Residues: 1-16 <res> A;Cross-references: GB:M90079; NID:g178784; PIDN:AAA35546.1; PID:g553187 A;Cross-references: GB:M90079; NID:g178784; PIDN:AAA35546.1; PID:g553187 R;Ichinose, A. R;Ichinose, A. Biochemistry 31, 3113-3118, 1992 A;Title: Multiple members of the plasminogen-apolipoprotein(a) gene family associated wit A;Reference number: I52415; MUID:92207924; PMID:1554698 A;Accession: I52415</res>	A;Molecule type: mRNA A;Residues: 1-4548 <mcl> A;Cross-references: GB:X06290; EMBL:X06696; NID:g28619; PIDN:CAA29618.1; PID:g28620 A;Cross-references: GB:X06290; EMBL:X06696; NID:g28619; PIDN:CAA29618.1; PID:g28620 A;Cross-references: GB:X06290; EMBL:X06696; NID:g28619; PIDN:CAA29618.1; PID:g28620 A;Cross-references: GB:X06290; MCLean, J.W.; Xu, Q.T.; Miller, C.G.; Lawn, R.M.; Proc. Natl. Acad. Sci. U.S.A. 84, 3224-3228, 1987 A;Title: Partial amino acid sequence of apolipoprotein(a) shows that it is homologous to A;Reference number: A28017; MUID:87204109; PMID:3472206 A;Reference number: A28017; MUID:87204109; PMID:3472206 A;Residues: 20-21; P',23-34;177-179,'N',181-186,'T',188-196,'DKG',200;292-314,'W',316-318 X',4396-4401 <eat's 1369-1373,="" 1993="" 5'="" 90,="" a.c.;="" a47277;="" a;reference="" a;sccession:="" a;statuus:="" a;title:="" acad.="" and="" apolipoprotein(a)="" b.r.;="" clarke,="" control="" d.p.;="" ddbj<="" embl="" from="" g.e.;="" gb="" gene="" j.g.;="" k.="" k.;="" lindahl,="" liu,="" meer,="" members="" muid:93165698;="" natl.="" not="" number:="" of="" plass="" pmid:7679504="" preliminary;="" proc.="" r;wade,="" regions="" related="" schwartz,="" sci.="" shown;="" td="" the="" translated="" translation="" u.s.a.="" zysow,=""><td>RESULT 1  \$00657  apoprotein(a) (EC 3.4.21) precursor [validated] - human apoprotein(a) (EC 3.4.21) precursor [validated] - human apoprotein(a) (EC 3.4.21) precursor [validated] - human N;Alternate names: apolipoprotein(a); lipoprotein(a) chain apo(a) C;Species: Homo sapiens (man) C;Species: Homo sapiens (man) C;Accession: \$00657; A28017; Ā47277; I60906; A47233; I52415; I65286 C;Accession: \$00657; A28017; Ā47277; I60906; A47233; I52415; I65286 R;McLean, J.W.; Tomlinson, J.E.; Kuang, W.J.; Eaton, D.L.; Chen, E.Y.; Fless, G.M.; Scant Nature 330, 132-137, 1987 A;Fitle: cDNA sequence of human apolipoprotein(a) is homologous to plasminogen. A;Reference number: \$00657; MUID:88039109; PMID:3670400 A;Accession: \$00657</td></eat's></mcl>	RESULT 1  \$00657  apoprotein(a) (EC 3.4.21) precursor [validated] - human apoprotein(a) (EC 3.4.21) precursor [validated] - human apoprotein(a) (EC 3.4.21) precursor [validated] - human N;Alternate names: apolipoprotein(a); lipoprotein(a) chain apo(a) C;Species: Homo sapiens (man) C;Species: Homo sapiens (man) C;Accession: \$00657; A28017; Ā47277; I60906; A47233; I52415; I65286 C;Accession: \$00657; A28017; Ā47277; I60906; A47233; I52415; I65286 R;McLean, J.W.; Tomlinson, J.E.; Kuang, W.J.; Eaton, D.L.; Chen, E.Y.; Fless, G.M.; Scant Nature 330, 132-137, 1987 A;Fitle: cDNA sequence of human apolipoprotein(a) is homologous to plasminogen. A;Reference number: \$00657; MUID:88039109; PMID:3670400 A;Accession: \$00657

t-plasminogen

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C;Superfamily: apolipoprotein(a); kringle homology; trypsin C;Keywords: hydrolase; kringle; lipid binding; lipoprotein; F;1-19/Domain: signal sequence #status predicted <SIG>
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A;Map position: 6q26-6q27
A;Note: several genes closely linked on chromosome 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Molecule type: DNA
A;Residues: 1-16 <RE4>
A;Cross-references: GB
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A;Molecule type: DNA
A;Residues: 1-16 <RE3>
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A;Status: preliminary; translated from GB/EMBL/DDBJ
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A;NOte: apo(a) gene 1 (nomenclature of reference I52415)
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;1054-1131/Domain: kringle homology <KR10>
;1168-1245/Domain: kringle homology <KR11>
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575/Domain: kringle homology KR7-
712-789/Domain: kringle homology KR7-
826-903/Domain: kringle homology KR8-
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28-105/Domain: kringle homology <KR1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cross-references: GB:M86878; NID:g178782; PIDN:AAA51749.1; PID:g553186
                                                                                                                                              Local
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                                61
                                                                                                                                96;
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                            INGPWCYTMNPRKLFDYCDIPLCASS
                                                              EQDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGD
                                                                                 EQDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGD
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                                                                                                                           Score 508; Db 1;
Pred. No. 3.5e-46;
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Plasmin (EC 3.4.21.7) precursor [validated] - human
N;Alternate names: plasminogen precursor [misnomer]
N;Contains: angiostatin; microplasmin; plasminogen
C;Species: Homo sapiens (man)
C;Bate: 24.Apr-1984 #sequence revision 02-Dec-1994 #text change 15-Sep-2000
C;Accession: A35229; I52242; A26646; I62738; I84609; S03735; A00929; A04627;
R;Petersen, T.E.; Martzen, M.R.; Ichinose, A.; Davie, E.W.
J. Biol. Chem. 265, 6104-6111, 1990
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A;Title: Definition of the transcription initiation site of human plasminogen gene in A;Reference number: 152242; MUID:91097523; PMID:2268308
A;Accession: 152242
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plasmin (EC 3.4.21.7) precursor - rhesus macaque
C;Species: Macaca mulatta (rhesus macaque)
C;Date: 31-Mar-1989 #sequence_revision 31-Mar-1989 #text_change 22-Jun-1999
C;Accession: B32869; B30848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                J. Biol. Chem. 265, 6104-6111, 1990
A,Title: Characterization of the gene for human plasminogen, a key proenzyme A,Reference number: A35229; MUID:90202879; PMID:2318848
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F;381-560/Domain: kringle homology <KR5+
F;481-560/Domain: trypsin homology <TRY>
F;581-803/Domain: trypsin homology <TRY>
F;49-73,53-61,103-181,124-164,152-176,185-262,188-316,206-245,234-257,275-352,296-335,324
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F;277-454/Domain: kringle homology <KR4>
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R;Tomlinson, J.E.; McLean, J.W.; Lawn, R.
J. Biol. Chem. 264, 5957-5965, 1989
A,Title: Molecular cloning and characterization of a full-length cDNA clone for human plan,Reference number: A26646; MUID:87162490; PMID:3030813
                                                       A;Cross-references: GB:M62890; NID:g190092; PIDN:AAA36454.1; PID:g553613 R;Forsgren, M.; Raden, B.; Israelsson, M.; Larsson, K.; Heden, L.O. FEBS Lett. 213, 254-260, 1987
                                                                                                                                                A; Molecule type: DNA
A; Residues: 1-16 < MAL1>
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A; Residues: 1-810 < PET>
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                                                                                                                                                                                                          A;Status: translated from GB/EMBL/DDBJ
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Best Local S
Matches 72
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Pred. No. 1e-38;
4; Mismatches
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R; Wiman, b.,
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A;Title: Studies on the active center of human plasmin. A;Reference number: A92048; MUID:69234739; PMID:4240117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Title: The primary structure of human plasminogen. II. A;Reference number: A92125; MUID:73149248; PMID:4694729
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A;Title: Amino-acid sequence of the cyanogen-bromide fragment from human plasminogen tha A;Reference number: A04626; MUID:76043692; PMID:126863
A;Accession: A04626
A;Accession: A04626
A;Accession: A04626
A;Molecule type: protein
A;Residues: 483-507,'E',509-604 <WI3>
A;Residues: 483-507,'E',509-604 <W
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                                                                                                                                                                                                                                                    R; Vali
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A; Residues: 20-50,'Q',51-71,'E',73-85,87-100 <WI2>
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A; Residues: 20-71,'E',73-85,87-106,'D',108-360,'E',362-810 <SOT>
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                                                                                                                                                                                                                                Trexler, M.; Vali, Z.; Patthy, L.
Biol. Chem. 257, 7401-7406, 1982
Title: Structure of the omega-aminocarboxylic acid-binding sites; Reference number: A92382; MUID:82213905; PMID:6919539; Contents: annotation; omega-aminocarboxylic acid binding sites; Vali, Z.; Patthy, L.
                                                         . Biol. Chem. 259, 13690-13694, 1984
;Title: The fibrin-binding site of human plasminogen. Arginines 32 and 34 are essential
;Reference number: A92458; MUID:85054794; PMID:6094526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Molecule type: DNA
Residues: 367-419
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Residues: 292-471, 'D', 473-810 <MAL2>
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Structural relationship
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L.; Petersen, T.E.;
Atlas, July 1977
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Lergier, W.;
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R;Rejante, M.R.; Llinas, M.
Buchem. 221, 927-937, 1994
Bur. J. Blochem. 221, 927-937, 1994
A;Title: (1)H-NMR assignments and secondary structure of human plasminogen kringle
A;Reference number: S43645; MUID:94237157; PMID:8181475
A;Contents: annotation; conformation by (1)H-NMR, residues 96-184
                                                                                                                                                                  A;Contents: annotation; conformation by (1)H-NMR, residues R;Rejante, M.; Llinas, M. submitted to the Brookhaven Protein Data Bank, August 1996 A;Reference number: A65804; PDB:HPK
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Biochemistry 30, 10576-10588, 1991
A;Title: Crystal and molecular structure of human plasminogen
A;Title: Crystal and molecular structure of human plasminogen
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A;Title: Generation of an angiostatin-like fragment from A;Reference number: A58812; MUID:9548733; PMID:9548733
                                                                                                                                                                                                                                                                                 R;Rejante, M.; Llinas, M.
submitted to the Brookhaven Protein Data Bank,
A;Reference number: A65803; PDB:1HPJ
                                                                                                                                                                                                                                                                                                                                                                                          A;Contents: annotation; X-ray crystallography, R;Stec, B.; Teeter, M.M.; Whitlow, M.; Yamano, submitted to the Brookhaven Protein Data Bank, A;Reference number: A65980; PDB:1KRN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Biochemistry 31, 270-279, 1992
A;Title: Crystal structure of the kringle 2 domain of tissue
A;Reference number: A39483; MUID:92118803; PMID:1310033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Biochemistry 30, 10589-10594, 1991
A;Title: The refined structure of the epsilon-aminocaproic acid complex A;Reference number: A58818; MUID:92031503; PMID:1657149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     submitted to the Brookhaven Protein Data Bank, A;Reference number: A52408; PDB:1PMK A;Contents annotation; X-ray crystallography, R;Tulinsky, A.; Mathews, I.I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R; Wu, T.P.; Padmanabhan, K.; Tulinsky, A.; Mulichak,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      submitted to the Brookhaven Protein Data Bank,
A;Reference number: A65245; PDB:1CEB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             submitted to the Brookhaven Protein Data Bank, A;Reference number: A65244; PDB:1CEA A;Contents: annotation; X-ray crystallography, D.M.lingty: A. Warberger
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             submitted to the Brookhaven Protein Data Bank, July 1991 A; Reference number: A51341; PDB:1PK4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Contents: annotation
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                                                                                                                                           A; Contents: annotation; conformation
                                                                                                                                                                                                                                                                                                                                                                 A; Contents: annotation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R; de Vos, A.M.; Ultsch, M.H.; Kelley, R.F.; Padmanabhan, K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Contents:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Contents: annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R; Mulichak, A.M.; Tulinsky,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Contents: annotation; X-ray crystallography, 2.1 angstroms,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R; Tulinsky, A.; Mathews, I.I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R;Padmanabhan, K.; Tulinsky,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Contents: annotation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Reference number: A51911; PDB:1PKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R;Wu, T.P.; Tulinsky, A. submitted to the Brookhaven Protein Data Bank,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Contents: annotation;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                submitted to the Brookhaven Protein Data Bank,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;Tulinsky, A.; Wu,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Contents: annotation; X-ray crystallography,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R;Tulinsky, A.; Mulichak, A.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Contents: annotation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ugwu, F.; Bini, A.; Collen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     271, 29461-29467, 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       X-ray crystallography,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    X-ray crystallography,
nsky, A.
                                                                                                                                                                                                                                                                                                                                                                 X-ray crystallography, 1.67 angstroms,
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                                                                                                                                                                                                                                                          (1)H-NMR, residues 103-181
                                                                                                                                              (1) H-NMR,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      plasminogen
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A;Contents: annotation; conformation by (1)H-NWR C;Comment: Plasminogen is synthesized by the kidney and is present in plasma and many c C;Comment: Plasminogen is converted to plasmin by plasminogen activators (see PIR:UKHU

R;Rejante, M.R.; Lilnas, M.
Eur. J. Biochem. 221, 939-949, 1994
A;Title: Solution structure of the epsilon-aminohexanoic
A;Reference number: A58817; MUID:94237158; PMID:8181476

acid

complex of human plasminoge

oct ar

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A;Pathway: fibrinolysis
C;Superfamily: plasmin; kringle homology; plasminogen-related protein |
C;Superfamily: plasmin; kringle homology; duplication; fibrinolysis; (
C;Keywords: angiogenesis inhibitor; blood; duplication; fibrinolysis; (
F;1-96/Domain: plasminogen-related protein precursor homology <PLPH>
F;1-96/Domain: signal sequence #status predicted <SIG>
F;20-810/Product: plasminogen #status experimental <PRO>
F;20-96/Domain: activation peptide #status experimental <AST>
F;99-466/Product: angiostatin #status experimental <AST>
F:97-580,581-810/Product: plasmin #status experimental <AST>
F:97-580,581-810/Product: plasmin #status experimental <AST>
A; Molecule type: protein
A; Rolecule type: protein
A; Residues: 118-460 <SC2>
C; Superfamily: plasmin; kringle homology; plasminogen-related protein precursor homology
C; Superfamily: plasmin; kringle homology crown in the protein protei
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F;97-580/Domain: plasmin chain A #status experimental <CHA>
F;103-181/Domain: kringle homology <KR1>
F;185-262/Domain: kringle homology <KR2>
F;275-352/Domain: kringle homology <KR3>
F;377-454/Domain: kringle homology <KR3>
F;377-454/Domain: kringle homology <KR5>
F;377-454/Domain: kringle homology <KR5>
F;550-580,581-810/Product: microplasmin #status experimental <MMT>
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C/Comment: Plasmin is inactivated by alpha-2-antiplasmin (see PIR:ITHUA2) immediately af C/Comment: Plasmin is inactivated by two disulfide bonds. Without the inhibitor, rg-580, resulting in two chains connected by two disulfide bonds. Without the inhibitor, C/Comment: Microplasmin is formed by autolytic cleavage of plasmin under artificial cond C/Comment: Stromelysin 1 (see PIR:KCHUS1) acts on plasminogen to produce angiostatin. To
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Molecule type: protein
A;Residues: 1-37;38-117 <SCH>
R;Schaller, J.; Etraub, C.; Kaempfer, U.; Rickli, E.E.
Protein Seq. Data Anal. 5, 21-25, 1992
A;Title: Complete amino acid sequence of ovine miniplasminogen.
A;Reference number: S28200; MUID:93149995; PMID:1492092
A;Accession: S28200
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A;Introns: 17/1; 62/2; 98/1; 136/2; 183/1; 223/2; 263/1; 317/2; 366/1; 419/2; 480/1; 529
C;Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Enzyme 40, 63-69, 1988
A;Title: Structural aspects of the plasminogen of various species A;Reference number: A61545; MUID:89005015; PMID:3168975
A;Accession: B61545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 plasmin (EC 3.4.21.7) precurso N;Alternate names: plasminogen N;Contains: miniplasminogen
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A;Cross-references: GDB:119498; OMIM:173350
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Enzyme 40, 63-69, 1988
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01-Nov-1996
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.7e-38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (domestic sheep)
#text_change 17-Mar-1999
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A;Title: Structural aspects of the plasminogen of various species.

A;Reference number: A61545; MUID:89005015; PMID:3168975

A;Accession: A61545

A;Accession: A61545

A;Molecule type: protein

A;Residues: 1-33;34-117 <SCH>

R;Schaller, J:, Straub, C:, Kaempfer, U:; Rickli, E.E.

Protein Seq. Data Anal. 4, 69-74, 1991

A;Title: Complete amino acid sequence of equine miniplasminogen.

A;Reference number: S17527; MUID:92052077; PMID:1946332

A;Accession: S17527

A;Molecule type: protein

A;Residues: 118-455 <SC2>
C;Superfamily: plasmin; kringle homology; plasminogen-related protein

C;Superfamily: plasmin; kringle homology; plasminogen-related protein
                                                                                                                                                                                                                                                                               F;118-455/Product: miniplasminogen #status experimental <MIN>F;126-205/Domain: kringle homology <KR5>F;226-455/Domain: plasmin chain B #status experimental <BCH>F;226-448/Domain: trypsin homology <TRY>F;26-7,310,405/Active site: His, Asp, Ser #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                  C;Superfamily: plasmin; kringle homology; plasminogen-related protein precursor homology; C;Keywords: fibrinolysis; glycoprotein; hydrolase; kringle; plasma; serine proteinase; Z) F;1-33,34-117,118-455/product: plasminogen (fragments) #status experimental <PRO> F;1-33/Domain: activation peptide (fragment) #status experimental <APT> F;34-117,118-225,226-455/product: plasmin (fragments) #status experimental <MAT> F;37-114/Domain: kringle homology <KR4> ....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N;Contains: miniplasminogen
C;Species: Equus caballus (domestic horse)
C;Spate: 28-Oct-1994 #sequence_revision 01-
C;Accession: A61545; S17527
R;Schaller, J; Rickli, E.E.
Enzyme 40, 63-69, 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      F;132-211/Domain: kringle homology <KR5>
F;236-460/Domain: plasmin chain B #status experimental <BCH>
F;236-460/Domain: trypsin homology <TRY>
F;231-453/Domain: trypsin homology <TRY>
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N;Alternate names: plasminogen
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Best Local
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183
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                                               61 INGPWCYTMNPRKLFDYCDIPLCASS 86
                                                                                                                                                                                        69;
                                                                                                                                         1 EQDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGD
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                                                                                              EPDCMLGIGKGYQGKKATTVTGTRCQAWAAQEPHRHSIFTPEANPWANLEKNYCRNPDGD
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82.6%;
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Pred. No. 3.
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Pred. No. 3.1e-3
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.9e-37;
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N;Contains: miniplasminogen C;Species: Sus scrofa domestica (domestic pig) C;Date: 07-Sep-1990 #sequence revision 01-Nov-1996 C;Accession: S03733; S03737; A25834

#text\_change 18-Jul-1997

PLPG
plasmin (EC 3.4.21.7) precursor N;Alternate names: plasminogen

pig

(fragment

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R;Lijnen, n...
J. Biochem.
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F;1-77/Domain: activation peptide #status predicted <APT>
F;1-77/Domain: chain A #status predicted <APT>
F;78-560/Product: plasmin chain A #status predicted <ACH>
F;84-162/Domain: kringle homology <KR1>
F;166-243/Domain: kringle homology <KR2>
F;256-333/Domain: kringle homology <KR3>
F;358-435/Domain: kringle homology <KR3>
F;358-435/Domain: kringle homology <KR3>
F;358-435/Domain: kringle homology <KR3>
F;450-790/Product: miniplasminogen #status experimental <MIN>
F;461-540/Domain: kringle homology <KR5>
F;661-783/Domain: kringle homology <KR5>
F;561-783/Domain: trypsin homology <KR5>
F;561-783/Domain: trypsin homology <KRY>
F;561-783/Domain: trypsin homology <KRY>
F;30-54,34-42,84-162,105-145,133-157,166-243,169-297,187-226,215-238,256-333,277-316,305
                                                                                                                                                                                          plasmin (EC 3.4.21.7) precursor - mouse
N;Contains: angiostatin; plasminogen
C;Species: Mus musculus (house mouse)
C;Date: 20-Sep-1991 #sequence revision 01-Nov-1996 #text_change 18-Jun-1999
C;Accession: A38514; S48202; S48203
R;Degen, S.J.F.; Bell, S.M.; Schaefer, L.A.; Elliott, R.W.
Genomics B, 49-61, 1990
A;Title: Characterization of the cDNA coding for mouse plasminogen and localization
A;Reference number: A38514; MUID:91184812; PMID:2081600
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Eur. J. Biochem. 149, 279-285, 1985
A;Title: Determination of the complete amino-acid sequence of porcine miniplasminogen.
A;Reference number: A25834; MUID:85203907; PMID:3846533
A;Accession: A25834
                        A;Cross-references: GB:J04766; NID:9200402; PINN:AA50168.1; PID:9200403 R;LiJnen, H.R.; van Hoef, B.; Beelen, V.; Collen, D. Eur. J. Biochem. 224, 863-871, 1994
                                                                                                                                                                        A; Accession: A38514
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Title: Comparison of the primary structure A; Reference number: S03735; MUID:81212097; PM
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                                                                                                              A; Residues: 1-812 < DEG>
                                                                                                                                         A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F;602,645,740/Active site: His, Asp, Ser #status predicted
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NGPWCYTMNPRKLFDYCDIPLCASS 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGDI 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EDCMFGNGKRYRGKRATTVAGVPCQEWAAQEPHRHSIFTPETNPRAGLEKNYCRNPDGDD 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1987
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Pred. No. 3
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F;103-181/Domain: kringle homology <KR1>
F;185-262/Domain: kringle homology <KR2>
F;275-352/Domain: kringle homology <KR3>
F;377-454/Domain: kringle homology <KR4>
F;377-454/Domain: kringle homology <KR4>
F;481-560/Domain: kringle homology <KR5>
F;481-560/Domain: kringle homology <KR5>
F;582-812/Domain: chain B #status predicted <BCH>
F;582-812/Domain: trypsin homology <TRY>
F;49-73,53-61,103-131,124-164,152-176,185-262,188-316,206-245,234-257,275-352,296-335,324
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F;20-96/Domain: activation peptide #status predicted <APT>
F;79-466/Product: angiostatin #status predicted <AST>
F;97-581,582-812/Product: plasmin #status predicted <MAT>
F;97-581/Domain: chain A #status predicted <ACH>
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A;Residues: 22-27 <LI2>
C;Comment: Plasminogen is synthesized by the kidney and is present in plasma and many oth
C;Comment: Plasminogen is converted into plasmin by plasminogen activators, both plasminc
mediately after dissociation from the clot. In the presence of the inhibitor, the activat
e inhibitor, the activation involves also removal of the activation peptide.
c;Comment: Stromelysin I (see PIR:KCMSSI) acts on plasminogen to produce angiostatin. To:
                                                                                                                                                                                                                                                                                                                          C;Species: Bos primigenius taurus (cattle)
C;Date: 30-Sep-1987 #sequence_revision 28-Apr-1995 #text_change 18-Jun-1999
C;Datesion: S45046; A25835; I45961; S0376.
R;Berglund, L.; Andersen, M.D.; Petersen, T.E.
submitted to the EMBL Data Library, May 1994
A;Description: Cloning and characterizatin of the bovine plasminogen cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   F;78-79/Cleavage site: Glu-Asm (stromelysin 1) #status predicted F;136,308/Binding site: carbohydrate (Asm) (covalent) #status predicted F;466-467/Cleavage site: Thr-Val (stromelysin 1) #status predicted F;581-582/Cleavage site: Arg-Val (plasminogen activator) #status experier;624,667,762/Active site: His, Asp, Ser #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Description: dissolves the fibrin of blood clots; acts as a proteolytic factor in a vains the walls of the graafian follicle; also activates the urokinase-type plasminogen activates the urokinase-type plasminogen. Superfamily: plasmin; kringle homology; plasminogen-related protein precursor homology; C;Keywords: angiogenesis inhibitor; blood; duplication; fibrinolysis; glycoprotein; hydrominogen activates and the urokinase type plasminogen.
A; Experimental source: liver A; Note: it is uncertain whether Met-1 or Met-8 is the initiator R; Schaller, J.; Moser, P.W.; Dannegger-Muller, G.A.K.; Rosselet,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 plasmin (EC 3.4.21.7) precursor - bovine N;Alternate names: plasminogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
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A; Molecule type: pro
A; Residues: 20-25 <
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                                                                                                                                                                     A; Molecule type: mRNA
A; Residues: 1-812 <BER>
                                                                                                                                                                                                                                                                                        A; Reference number: S45046
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                                                                                                                           A;Cross-references: EMBL:X79402; NID:g494962; PIDN:CAA55939.1; PID:g494963
                                                                                                                                                                                                                                                   A; Accession: S45046
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Best Local :
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Pred. No. 6.5e-36;
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S.J.; Kampfer,

U.; Rickl

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Eur. J. Blochem. 114, 465-470, 1981

A;Title: Comparison of the primary structure of the N-terminal CNBr fragments of human, A;Reference number: S03735; MUID:81212097; PMID:7238497

A;Accession: S03736

A;Accession: Accession: Accession
A;Accession: I46260
A;Status: preliminary; translated
A;Molecule type: mRNA
                                                                                               A;Title: Characterization of a complementary deoxyribonucleic acid coding A;Reference number: I45961; MUID:85023311; PMID:6148961
A;Recession: I45961
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Molecule type: mRNA
A;Residues: 706-743,'R',745-812 <MAL>
A;Residues: 706-743,'R',745-812 <MAL>
A;Residues: GB:KO2935; NID:g163551; PIDN:AAA30714.1; PID:g163552
A;Cross-references: GB:KO2935; NID:g163551; PIDN:AAA30714.1; Lergier, W.;
Biochem. 114, 465-470, 1981
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A;Molecule type: protein
A;Residues: 27-334,'D',336-515,'H',517-554,'L',556-812
R;Malinowski, D.P.; Sadler, J.E.; Davie, E.W.
Biochemistry 23, 4243-4250, 1984
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7,315/Binding site: carbohydrate (Asn) (covalent) #status experimental
7,365/Binding site: carbohydrate (Ser) (covalent) #status experimental
7,624,667,762/Active site: His, Asp, Ser #status predicted
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Best Local S
Matches 67
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;Title: Complete amino acid sequence of bovine plasminogen. Comparison with human
;Reference number: A25835; MUID:85203906; PMID:3846532
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Pred. No. 6.5e-36;
5; Mismatches 14
                                          from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            86
                                                                                                          Insights from cloning PMID:7592597
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                                                                                                                                                                                                                G.E.; Wade,
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                                                                                                                                             of hedgehog
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A,Title: Molecular cloning of rat macrophage-stimulating A;Reference number: JC5061; MUID:97011126; PMID:8858136 A;Accession: JC5061

protein

and its involvement

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o :-

Hamaguchi, I.;

Takasu, N

R;Ohshiro, K.; Iwama, A.; Matsuno, K.; Ezaki, T.; Sakamoto, Biochem. Biophys. Res. Commun. 227, 273-280, 1996

A; Molecule type: mRNA A; Residues: 1-716 < OHS>

A;Cross-references:

EMBL: X95096;

NID:g1669718;

PIDN: CAA64473.1;

PID:g1669719

macrophage-stimulating protein 1 precursor - C;Species: Rattus norvegicus (Norway rat) C;Date: 31-Jan-1997 #sequence\_revision 31-Jar C;Accession: JC5061

31-Jan-1997 #text\_change 16-Jun-2000

RESULT JC5061

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RESULT 10
A40522
A40522
Plasmin (EC 3.4.21.7) precursor - rat (fragment)
C;Species: Rattus norvegicus (Norway rat)
C;Date: 28-Feb-1992 #sequence_revision 17-Apr-1993 #te
C;Accession: A40522
R;Kanalas, J.J.; Makker, S.P.
J. Biol. Chem. 266, 10825-10829, 1991
A;Title: Identification of the rat Heymann nephritis a
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A;Cross-references: EMBL:U33171; NID:g1046360; PID:g1046361
C;Superfamily: plasmin; kringle homology; plasminogen-related
C;Keywords: hydrolase; serine proteinase
F;1-96/Domain: plasminogen-related protein precursor homology
F;103-181/Domain: kringle homology <KR1>
F;105-262/Domain: kringle homology <KR2>
F;275-352/Domain: kringle homology <KR3>
F;379-456/Domain: kringle homology <KR4>
F;482-561/Domain: kringle homology <KR4>
F;482-561/Domain: kringle homology <KR4>
F;482-561/Domain: kringle homology <KR4>
                                                                                                                                                                                                                                                             A;Accession: A40522
A;Status: preliminary
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-169 <KAN>
A;Cross-references: GB:M62832; NID:g206215; PIDN:AAA41884.1; PID:g554488
A;Cross-references: GB:M62832; NID:g206215; PIDN:AAA41884.1; PID:g554488
A;Cross-references: GB:M62832; NID:g206215; PIDN:AAA41884.1; PID:g554488
A;Note: the authors translated the codon TCT for residue 76 as Ala
C;Superfamily: plasmin; kringle homology; plasminogen-related protein precursor homology;
C;Keywords: fibrinolysis; glycoprotein; hydrolase; kringle; serine proteinase
F;34-112/Domain: kringle homology <KRGs
F;34-112,55-95,83-107/Disulfide bonds: #status predicted
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Best Local S
Matches 41
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                                       62 NGPWCYTMNPRKLFDYCDIFLCASS
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RGPWCFTTDPSVRWEYCNLKRCSET 115
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                                                                                     QECYQGNGKSYRGTSSTTNTGKKCQSWVSMTPHSHSK-TPANFPDSGLEMNYCRNPDNDQ 90
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                                                                                                                                                                                               47.9%; Score 243.5; DB 2; 48.2%; Pred. No. 4.9e-19;
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77.6%;
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Pred. No. 5.7e-34;
3; Mismatches 16
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macrophage-stimulating protein 1 precursor - human C;Species: Homo Bapiens (man) C;Decies: Homo Bapiens (man) C;Dace: 03-May-1994 #sequence revision 14-Nov-1997 #text_change 18-Jun-1999 C;Accession: A40331; B40331; A47136; A61395 R;Han, S.; Stuart, L.A.; Degen, S.J.F. Biochemistry 30, 9768-9780, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R;Schaller, J.; Rickli, E.E. Enzyme 40, 63-69, 1988 A;Title: Structural aspects A;Reference number: A61545; A;Accession: C61545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Complex: disulfide-bonded heterodimer of chains derived from the same precursor C;Superfamily: hepatocyte growth factor; wringle homology; trypsin homology C;Keywords: duplication; glycoprotein; growth factor; kringle F;131/Domain: signal sequence #status predicted <SIG> F;32-488,489-716/Product: macrophage-stimulating protein 1 #status predicted <ACH> F;32-488/Domain: macrophage-stimulating protein 1 alpha chain #status predicted <ACH> F;110-186/Domain: kringle homology <KRI1> F;191-268/Domain: kringle homology <KRI2> F;192-370/Domain: kringle homology <KRI3> F;379-457/Domain: kringle homology <KRI3>
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F;489-709/Domain: try
F;72,305,620/Binding
                                                                     A;Title: Characterization of the DNF15S2 locus on human chromosome A;Reference number: A40331; MUID:92002016; PMID:1655021 A;Accession: A40331
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                               A; Molecule type: DNA
A; Residues: 1-711 <HA1>
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;Species: Capra aegagrus hircus (domestic goat)
;Date: 28-Oct-1994 #sequence_revision 28-Oct-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;Superfamily: plasmin; kringle homology; plasminogen-related protein precursor homology
;Keywords: hydrolase; serine proteinase
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                   NGPWCYTMNPRKLFDYCDIPLCA 84
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rickli, E.E.
9, 1988
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trypsin homology <TRY>
ing site: carbohydrate (Asn) (covalent) #status predicted
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Pred. No. 2.1e
14; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 242; DB 2;
Pred. No. 5.2e-19;
2; Mismatches 27;
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ches 27;
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A;Cross-references: GB:M74181; NID C;Genetics:
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                                                 A; Molecule type: mRNA
A; Residues: 1-18, 'P', 20-716
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A;Accession: B40332
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A; Residues: 1-716 < DEG>
                                                                   A; Molecule type:
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A;Map position: 3p21-3p21.3
C;Complex: disulfide-bonded heterodimer of chains derived from the same precursor C;Complex: disulfide-bonded heterodimer of chains derived from the same precursor C;Superfamily: hepatocyte growth factor; kringle homology; trypsin homology C;Keywords: duplication; glycoprotein; growth factor; kringle; plasma F;1-18/Domain: signal sequence #status predicted <SIG>F;19-483,484-711/Product: macrophage-stimulating protein 1 #status predicted <MAT>F;19-483/Domain: alpha chain #status predicted <ACH>F;19-2843/Domain: kringle homology <KR1>F;10-186/Domain: kringle homology <KR2>F;10-286/Domain: kringle homology <KR3>F;30-448/Domain: kringle homology <KR4>F;370-448/Domain: kringle homology <KR4>F;370-448/Domain: bcta chain #status predicted <BCH>F;484-701/Domain: trypsin homology <TRY>F;484-704/Domain: trypsin homology <TRY>F;484-704/Domain: trypsin homology <TRY>F;484-704/Binding site: carbohydrate (Asn) (covalent) #status predicted
macrophage-stimulating protein 1 precursor - mouse
N;Alternate names: hepatocyte growth factor-like protein
C;Species: Mus musculus (house mouse)
C;Date: 17-U11-1992 #sequence_revision 17-U11-1992 #text_change 18-Jun-1999
C;Accession: A40332; B40332
C;Accession: A40332; B40332; Han, S.; Jamison, C.S.
B;Degen, S.J.F.; Stuart, L.A.; Han, S.; Jamison, C.S.
Biochemistry 30, 9781-9791, 1991
A;Title: Characterization of the mouse cDNA and gene coding for a hepatocyte
A;Reference number: A40332; MUID:92002017; PMID:1832957
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A;Molecule type: protein
A;Residues: 230-247;288-291,'E',293-295,'X',297-301,'X',303,'E',305,'EX',308-310;326-331,
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A;Residues: 1-711 <HA2>
A;Cross-references: GB:M74178; NID:g183976; PIDN:AAA50165.1; PID:g183977
A;Cross-references: GB:M74178; NiD:g183976; A.; Leonard, E.J.

J. Biol. Chem. 268, 15461-15468, 1993
J. Biol. Chem. 268, 15461-15468, 1993
A;Title: Cloning, sequencing, and expression of human macrophage stimulating protein A;Reference number: A47136; MUID:93340141; PMID:8393443
A;Accession: A47136
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A; Molecule type: mRNA
A; Residues: 1-711 <HA:
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A;Cross-references: GB:L11924; NID:g398037; PIDN:AAA59872.1; PID:g398038
A;Cross-references: GB:L11924; NID:g398037; PIDN:AAA59872.1; PID:g398038
A;Note: authors translated the codon TTT for residue 623 as Leu; parts of this sequence vA;Note: authors translated the codon TTT for residue 623 as Leu; parts of this sequence vA;Note: A; Yoshimura, T.; Showalter, S.D.; Tanaka, S.; Appella, B.; Leonard, B.J.
J. Exp. Med. 173, 1227-1234, 1991
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A;Cross-references: GDB:128833; OMIM:142408
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Similarity 51.8%;
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Pred. No. 3.4e-18;
1; Mismatches 28;
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NID:g193831; PIDN:AAA50166.1;

PID:g193832

for a hepatocyte growth

facto

NID:g193833; PIDN:AAA50167.1;

PID:g193834

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A;Introns: 18/1; 67/2; 105/1; 143/2; 189/1; 229/2; 269/1; 334/2; 378/1; 412/2; 458/1; 47 C;Complex: disulfide-bonded heterodimer of chains derived from the same precursor C;Superfamily: hepatocyte growth factor; kringle homology; trypsin homology C;Keywords: duplication; glycoprotein; growth factor; kringle C;Keywords: signal sequence #status predicted <SIG>
F;13-31/Domain: signal sequence #status predicted <SIG>
F;19-488/489-716/Product: macrophage-stimulating protein 1 #status experimental <MAT>
F;19-483/Domain: alpha chain #status experimental <ACH>
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A;Title: The recurring evolution of Lp(a): Insights from cloning of hedgehog apolipoprot A;Reference number: 146259; MUID:96025778; PMID:7592597
A;Accession: T18518
A;Status: preliminary; translated from GB/EMBL/DDBJ
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C;Species: Erinaceus europaeus (western European hedgehog)
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 07-Dec-1999
C;Accession: T18518
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F;191-268/Domain: kringle homology <RR2>
F;292-370/Domain: kringle homology <RR3>
F;292-370/Domain: kringle homology <RR3>
F;379-457/Domain: kringle homology <RR4>
F;379-457/Domain: bringle homology <RR4>
F;484-711/Domain: beta chain #status experimental <BCH>
F;484-701/Domain: trypsin homology <RR4>
F;489-709/Domain: trypsin homology <RR4>
F;489-709/Domain: trypsin homology <RR4>
F;489-709/Domain: homology <RR4>
F;480-709/Domain: homology <R84>
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Search completed: January 12, 2004, 17:26:24
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A;Reeiduee: 1-2869 <LAW>
A;Cross-references: EMBL:U33170; NID:g1046358; PID:g1046359; PIDN:AAC48522.1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
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Local Similarity 48.8%; Pred. No. 5.6e-18;
hes 40; Conservative 14; Mismatches 27; Indels 1
                                                                                                                                                                                                                            2648 -APWCYTTNSAVRWEYCSIPTCESS 2671
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  127863 seqs, 47026705 residues
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508
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P08519 homo sapien P12545 macaca mula P00747 homo sapien P80010 canis famil P81286 ovis aries P80010 equus cabal P20918 mus musculu P06867 sus scrofa P06868 bos taurus Q29485 erinaceus e Q01177 rattus norv P26928 mus musculu P14417 macaca mula P14210 homo sapien Q08048 mus musculu P17945 rattus norv P00735 bos taurus P33574 petromyzon Q01974 homo sapien Q9z138 mus musculu P18292 rattus norv P00734 homo sapien Q9z138 mus musculu P18292 rattus porroportia drosophila P00750 homo sapien Q9x187 mus musculu P10921 mus musculu P10734 homo sapien Q3x187 mus musculu Q8x187 mus musculu Q8x187 mus musculu Q8x187 mus musculu Q8x187 mus musculu
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associated with a lysine binding defect in Lp(a).";

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ARG-4193. =95002201; PubMed=7918 .M., Pfaffinger D., Le point mutation (Trp Tred with a lyaira bind	OGRAPHY (2.0 ANGSTROMS) OF 391; PubMed=8642595; Boettcher B.R.; taures of apolipoprotein(a) laters of apolipoprotein and wore of novel and expected bin 256:751-761(1996).	ROY Poff	PubMed=25 PubMed=25 PidMed=25 PidMed= Med to fi f cleavin O(1989). O(1989).	nor in ded	Crea Crea Last Last	473 4673 4759 4759 1 4559 1 433 1 593 1
=7918682; ., Lee J.C., Hir (Trp72>Arg) i	ANGSTROMS 42595; ettcher E ipoprotei oic acid d expecte 996).		31657; I., Zardi : bronectin g it."; g 30631;	; C; ; C; 040 Kuai R.? ipoj	PRT; ted) sequence annotatio	KRM1_RAT KRM2_HUMAN TPA_MOUSE KRM1_HUMAN KRM1_XENIA TPA_RAT TPA_RAT HUMAN HOFA_HUMAN HOROK_POUSE ROR1_DROMES FA12_BOVIN UROK_RAT UROK_RAT ALIGNMEN
Hinman J.; g) in human apo(a)	)) OF 4121-4208. S.R.; n(a) kringle IV37 fi and with p-aminomet) ed binding modes.";	LINKED GLYCANS.  Harvey D.J., Rudd P.M. and O-glycans of human cans in conferring proton	L., Vaheri A., Ehnhol and has serine prote	ertebrata; Hominidae; Eaton D.L.,	4548 AA.  update) ion update) 4.21) (Apo(a)) (Lp(a)	TTS
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Bicobias Bicobys, Acta 1227/41-5(1994)

CL DUNCTION, Apocal is the main constituent of lipoprocesin(a) (1604)). It has serine proteinase activity and a bale of autoprocessysts. Inhibits tissue-type plasmingen activator 1. (4061). It has serine proteinase activity and a bale of autoprocessysts. Inhibits tissue-type plasmingen activator 1. (4061). It has serine proteinase activity and a bale of the constituent of the constituent
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SEQUENCE FROM N. SEQUENCE FROM N. MEDLINE=89174660 Tomlineon J.E., "Rhesus monkey a synthesis.";		01-0CT-1989 01-0CT-1989 01-0CT-1989 28-FEB-2003 Plasminogen	.Mag	61 4285	1 4225	Query Match Best Local S Matches 86	SEQUENCE	VARIANT	ACT_SITE	DOMAIN	DOMAIN	DOMAIN DOMAIN	DOMAIN DOMAIN	DOMAIN DOMAIN	DOMAIN	DOMAIN	DOMAIN	DOMAIN	DOMAIN	DOMAIN	DOMAIN	DOMAIN	DOMAIN	DOMAIN	DOMAIN DOMAIN
FROM N.A 9174660; J.E., M Onkey ap	latta (Rhei ; Metazoa; Eutheria; ecinae; Mao D=9544;	89 (Rel. 12, 89 (Rel. 12, 03 (Rel. 41, en precurso)	S	INGPWCYT	EQDCMFGNG	imilarit; Conse	4548 A	4498 4193	4412	4328	4113 4227	3885 3999	3665 3771	3437 3551	3323	2981 3095	2753 2867	2525 2639	2297	2069	1841 1955	1613 1727	1385	1157	815 929 1043
PubMed= cLean J. olipopro	(Rhesus macaque) zoa; Chordata; ( ria; Primates; ( ; Macaca.	Creat Last Last (EC 3	TANDARD;	CYTMNPRKLFDYC            CYTMNPRKLFDYC	KGYR KGYR	100.0 Y 100.0 rvative	AA; 501313	4498 4193	4412	4548	4226 4327	3998 4112	3770 3884	3550 3664	3436	3094 3208	2866 2980	2638 2752	2524	2182 2296	1954 2068	1726 1840	1498 1612	1270	928 1042
.2925643; W., Lawn R.M.; hein(a). Sequence, evolution, and sites of	aque). sta; Craniata; Vertebrata; Euteleostomi; ses; Catarrhini; Cercopithecidae;	ated)  sequence update)  annotation update)  3.4.21.7).	PRT; 810 AA.	CODIPLCASS 86            CDIPLCASS 4310	SKKATTVTGTPCQEWAAQEPHRHSTF1PGTNKWAGLEKNYCRNPDGD 60 	%; Score 508; DB 1; Length 4548; )%; Pred. No. 3.2e-48; 0; Mismatches 0; Indels 0; Gaps 0	/FTId=VAR 006633.   FTId=VAR 006633.  3 MW; 96921BE96A465C5F CRC64;	JOSS OF	Y S	OTEASE.	TYPE IV,	CYPE IV, 35	TYPE IV, 33	TYPE IV, 31	TYPE IV, 30	TYPE IV, 27	TYPE IV, 25	IV, 23	TYPE IV, 21	TYPE IV, 19	IV, 17	TYPE IV, 15		TYPE IV, 11	KRINGLE TYPE IV, 8. KRINGLE TYPE IV, 9. KRINGLE TYPE IV. 10.

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InterPro; IPRO01314; Chymotrypsin.
InterPro; IPRO03014; PAN.
InterPro; IPRO03014; PAN.
InterPro; IPRO03609; PAN app.
InterPro; IPRO03609; Pan app.
InterPro; IPRO0366; ProThrombin.
InterPro; IPRO01254; Ser protease_Try.
IPEam; PPO0024; PAN; 1.
IPEam; PPO0024; PAN; 1.
IPEam; PPO0029; trypsin; 1.
IPEAM; PRO01089; trypsin; 1.
IPEAM; PRO01089; trypsin; 1.
IPEAM; PRO01089; trypsin; 1.
IPEAM; PRO01099; KRINGLE
IPEAM; PRO01099; KRINGLE
IPEAM; PRO01099; KRINGLE
IPEAM; SMO0130; KR; 4.
SMART; SMO0130; KR; 4.
SMART; SMO0130; TRYBSIN_DRY; 1.
IPROSITE; PS00021; KRINGLE 1; 5.
IPROSITE; PS00021; KRINGLE 2; 5.
IPROSITE; PS000136; TRYPSIN_DRY; 1.
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                                                                                                                                                                                                                                                                                                                                  Tissue
                                                                                                                                                                                                                                                                                                                                                          Hydrolase;
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ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO FIBRIN. ACTIVATED WITH CATALYTIC AMOUNTS OF STREPTOKINASE.

MISCELLANEOUS: PLASMIN IS INACTIVATED BY ALPHA-2-ANTIPLASMIN IS INACTIVATED BY ALPHA-2-ANTIPLASMIN IS INMEDIATELY AFTER DISSOCIATION FROM THE CLOT.

MISCELLANEOUS: IN THE PRESENCE OF THE INHIBITOR, THE ACTIVATION INVOLVES ONLY CLEAVAGE AFTER ARG-580, RESULTING IN 2 CHAINS HELD TOGETHER BY 2 DISULFIDE BONDS. WITHOUT THE INHIBITOR, THE ACTIVATION INVOLVES ALSO REMOVAL OF THE ACTIVATION PEPTIDE.

SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY.

SIMILARITY: Contains 5 kringle domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FUNCTION: PLASMIN DISSOLVES THE FIBRIN OF BLOOD CLOTS AND ACTS A PROTEOLYTIC FACTOR IN A VARIETY OF OTHER PROCESSES INCLUDING EMBRYONIC DEVELOPMENT, TISSUE REMODELING, TUMOR INVASION, AND INFLAMMATION; IN OVULATION IT WEAKENS THE WALLS OF THE GRAAFIAN FOOLICLE. IT ACTIVATES THE UROKINASE-TYPE PLASMINOGEN ACTIVATOR, COLLAGENASES AND SEVERAL COMPLEMENT ZYMOGENS, SUCH AS CI AND CS. IT CLEAVES FIBRIN, FIBRONECTIN, THROMBOSPONDIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LAMININ AND VON WILLEBRAND FACTOR.

CATALYTIC ACTIVITY: Preferential cleavage: Lys-|-Xaa > Arg-|-higher selectivity than trypsin. Converts fibrin into soluble
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581
103
1184
275
377
481
581
                                                                                                                                                                                                                                                                                                                               protease; Plasma; Glycoprotein; Fibrinolysis;
    Blood coagulation; Kringle; Zymogen; Repeat;
         19
580
580
580
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  PLASMINGEN.
PLASMIN HEAVY CHAIN A.
ACTIVATION PEPTIDE.
PLASMIN SHORT FORM OF CI
PLASMIN LIGHT CHAIN B.
KRINGLE 1.
KRINGLE 2.
KRINGLE 3.
KRINGLE 4.
KRINGLE 5.
SEBINE PROTEASE.
CHARGE RELAY SYSTEM.
                                                                                             N SHORT FORM OF CHAIN !
N LIGHT CHAIN B.
E 1.
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E 3.
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21-JUL-1986
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
NCBI_TaxID=9606;
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MEDLINE=87162490; PubMed=3030813;
Forsgren M., Raden B., Israelsson
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MEDLINE=90202879; PubMed=2318848;

Metersen T.E., Martzen M.R., Ichinose A., Davie E.W.;

"Characterization of the gene for human plasminogen, and the fibrinolytic system.";

J. Biol. Chem. 265:6104-6111(1990).
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MEDLINE=85023311; pubMed=6148961; Malinowski D.P., Sadler J.E., Davie E "Characterization of a complementary human and bovine plasminogen."; Biochemistry 23:4243-4250(1984).
[13]
PHOSPHORYLATION SITE
MEDLINE=97345939; Pul
                                                                                                                                          Trexler M., Vali Z., Patthy L.;
"Structure of the omega-aminocraboxylic plasminogen. Arginine 70 and aspartic acbinding of ligand by kringle 4.";
J. Biol. Chem. 257:7401-7406(1982).
                                                                                                                                                                                                                                                      Groskopf W.R., Summaria L., Robbins K.C., "Studies on the active center of human plasmin. sequence of a peptide containing the active cent J. Biol. Chem. 244:3590-3597(1969).
                                                                                                                                                                                                                                                                                                                                                        Robbins K.C., Bernabe P., Arzadon L., Summaria L., "The primary structure of human plasminogen. II. The histidine of human plasmin. light (B) chain active center histidine seque J. Biol. Chem. 248:1631-1633(1973).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Amino-acid sequence of the cyanogen-bromide fragment in plasminogen that forms the linkage between the plasmin fur. J. Biochem. 58:539-547(1975).
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activation peptide as st
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                                i Z., Patthy L.;
e fibrin-binding site of human plasminogen. Arginines 32
essential for fibrin affinity of the kringle 1 domain.",
Biol. Chem. 259:13690-13694(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ENCE OF 95-580; 581-626; 657-700 AND 732-810.
rup-Jensen L., Claeys H., Zajdel M., Petersen T.E., Magnussor
Davidson J.F., Rowan R.M., Samama M.M., Desnoyers P.C. (eds.
ress in chemical fibrinolysis and thrombolysis, pp.3:191-209,
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O'Reilly M.S., Holmgren L., Shing Y., Chen C., Rosenthal R.A., Moses M., Lane W.S., Cao Y., Sage E.H., Folkman J.; "Angiostatin: a novel angiogenesis inhibitor that mediates the suppression of metastases by a Lewis lung carcinoma."; Cell 79:315-328(1994).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Marti T., Schaller J., Rickli E.E., Schmid K
Gerwig G.J., van Halbeek H., Vliegenthart J.
"The N- and O-linked carbohydrate chains of
plasminogen. Species specificity in relation
fucosylation patterns.";
Eur. J. Blochem. 173:57-63(1988).
                                                                                                                                                                                                        Stec B., Yamano A., Whitlow M., leeter ....., Stec B., Yamano A., Whitlow M., leeter ....., 168. "Structure of human plasminogen kringle 4 at 1.68. A possible structural role of disordered residues. A possible structural role of disordered residues. A possible structural role of disordered residues.
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"Serine-578 is a major
plasminogen.";
                                                                                                         "Crystal structures of the recombinant kringle I domain of huna plasminogen in complexes with the ligands epsilon-aminocaproic and trans-4-(aminomethyl)cyclohexane-1-carboxylic Acid."; Biochemistry 35:2567-2576(1996).
                                                                                                                                                                                                                                                                                               Wu T.-P., Padmanabhan K., Tulinsky A., Mulichak A.N. "The refined structure of the epsilon-aminocaproic human plasminogen kringle 4."; Biochemistry 30:10589-10594(1991).
                                                                                                                                                                                                                                                                                                                                                                                                          Mulichak A.M., Tulinsky A., Ravichandran K.G.; "Crystal and molecular structure of human plas refined at 1.9-A resolution.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=97238710; PubMed=91022; Sim B.K., O'Reilly M.S., Liang Lapcevich R., Nacy C.A.;
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J. Biol. Chem. 272:7408-7411(1997).
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Marti T., Schaller J., Rickli E.E
                                       Chang Y., Mochalkin Castellino F.J.;
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                                                      Tulinsky
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                             recombinant
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                             kringle
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RN SEQUEN
RC TISSUE
RX MEDLIN
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CC TISSUE=Plasma;

XX MEDLINE=90175323; PubMed=2626424;

XX MEDLINE=90
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Best Local S
Matches 70
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01-NOV-1991
01-NOV-1991
16-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                 Canis familiaris (Dog).
Canis familiaris (Dog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Marmania: Eutheria; Carnivora; Fissipedia; Canidae; Canis.
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MEDLINE=94237157; PubMed=8181475;
Rejante M.R.; Llinas M.;
"1H-NMR assignments and secondary
kringle 1.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRUCTURE BY NMR OF 183-354.
MEDLINE=96194156; PubMed=8652577;
Soehndel S., Hu C.-K., Marti D., Affolter M.,
Rickli E.B.;
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"Solution structure of the epsilon-aminohexanoic
human plasminogen kringle l.",
Eur. J. Biochem. 221:939-949(1994).
                                                                                                                                                                                                                                                                                                                                      SEQUENCE
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MEDLINE=90219023; PubMed=215785
Atkinson R.A., Williams R.J.P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Recombinant gene expression and 1H NMR characteristics of the kringle (2 + 3) supermodule: spectroscopic/functional individuality of plasminogen kringle domains."; Biochemistry 35:2357-2364(1996).
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MEDLINE=94237158; PubMed=8181476;
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STRUCTURE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Solution structure of the kringle 4 domain from the structure of the kringle 4 domain from the nuclear magnetic resonance spectroscopy and J. Mol. Biol. 212:541-552(1990).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (Rel. 20, Created)
(Rel. 20, Last sequence update)
(Rel. 40, Last annotation updat
(EC 3.4.21.7) (Fragment).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84.6%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 430; DB 1;
Pred. No. 2.7e-40;
7; Mismatches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           85
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and distance geometry.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Schaller J., Llinas
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PRINTS; PRO07018; KRINGLE.
PRINTS; PRO07018; KRINGLE.
PRINTS; PRO1505; PROTHROMBIN.
PRODOM; PD000395; Kringle; 1.
SMART; SM00130; KR; 1.
SMART; SM00020; Tryp SPc; 1.
PROSITE; PS00021; KRINGLE 1; 1.
PROSITE; PS50070; KRINGLE 2; 1.
PROSITE; PS500240; TRYPSIN_DOM; 1.
PROSITE; PS50134; TRYPSIN_DOM; 1.
PROSITE; PS00135; TRYPSIN_SER; 1.
Hydrolase; Serine protease; Plasma; Tissue remodeling; Blood coagulation
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InterPro; IPR0010001; Kringle.
InterPro; IPR001966; Prothrombin.
InterPro; IPR001254; Ser_protease_Try.
Pfam; pr000051; kringle; 1.
Pfam; pr000051; kringle; 1.
Pfam; pr000051; kringle; 1.
Pfam; pr000052; CHYMOTRYPSIN.
                                                                                                                                                                                SEQUENCE
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MISCELLANEOUS PLASMIN IS INACTIVATED BY ALPHA-2-ANTIPLASMIN
IMMEDIATELY AFTER DISSOCIATION FROM THE CLOT.
SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFISIMILARITY: Contains at least 1 kringle domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             products.
ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND FIBRIN. ACTIVATED WITH UROKINASE AND HIGH CONCENTRATIONS OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CATALYTIC ACTIVITY: Preferential cleavage: Lys-|-Xaa > Arg-|-Xaa; higher selectivity than trypsin. Converts fibrin into soluble
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LAMININ AND VON WILLEBRAND FACTOR. CATALYTIC ACTIVITY: Preferential c
63
                            63
                                                                                        w
                                                                                                                                    Similarity
               GPWCYTMNPRKLFDYCDIPLCASS 86
                                                                              DCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGDIN
                                                            DCMFGNGKGYRGKKATTVMGIPCQEWAAQEPHRHSIFTPETNPQAGLEKNYCRNPDGDVN
                                                                                                                                                                                333
                                                                                                                      Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                            103
333
333
83
66
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                                                                                                                                   83.7%;
84.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     coagulation;
                                                                                                                                                                                          BY SIMILARITY.
BY SIMILARITY.
EX SIMILARITY.

EX SIMILARITY.

INTERCHAIN (BY SIMILARITY).

INTERCHAIN (BY SIMILARITY).

INTERCHAIN (BY SIMILARITY).

BY SIMILARITY.

CHARGE RELAY SYSTEM (BY SIMILARITY).

CHARGE RELAY SYSTEM (BY SIMILARITY).

STREPTOKINASE-BINDING SITE (PROBABLE).

STREPTOKINASE-BINDING SITE (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plasma; Glycoprotein; Fibrinolysis; agulation; Kringle; Zymogen.
                                                                                                                                    Score 425; DB 1;
Pred. No. 3.8e-40;
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PLASMIN LI
KRINGLE 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             SERINE PROTEASE.
                                                                                                                                                                                  C8C0271B6C6AC8D4 CRC64;
                                                                                                                      Mismatches
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LIGHT CHAIN B.
                                                                                                                      10;
                                                                                                                                                  Length 333;
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RESULT 5
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STANDARD;

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SOLITINE SERVICE SERVI
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Matches
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PRINTS; PRO10018; KRINGLE.
PRINTS; PRO10018; KRINGLE.
PRINTS; PRO1505; PROTHROMBIN.
ProDom; PD000395; Kringle; 1.
SMART; SM00130; KR; 1.
SMART; SM00130; Tryp SPc; 1.
PROSITE; PS00021; KRINGLE 1; 1.
PROSITE; PS50070; KRINGLE 2; 1.
PROSITE; PS50070; KRINGLE 2; 1.
PROSITE; PS500134; TRYPSIN DOM; 1.
PROSITE; PS500134; TRYPSIN SER; 1.
PROSITE; PS00135; TRYPSIN SER; 1.
PROSITE; PS00135; TRYPSIN SER; 1.
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15-DEC-1998
15-DEC-1998
28-FEB-2003
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"Complete amino acid sequence of ovine miniplasminogen.";
"Complete amino acid sequence of ovine miniplasminogen.";
"Protein Seq. Data Anal. 5:21-25 (1992).
-I- FUNCTION: PLASMIN DISSOLVES THE FIBRIN OF BLOOD CLOTS AND ACTS
A PROTEOLYTIC FACTOR IN A VARIETY OF OTHER PROCESSES INCLUDING EMBRYONIC DEVELOPMENT, TISSUE REMODELING, TUMOR INVASION,
AND INFLAMMATION; IN OVULATION IT MEAKENS THE WALLS OF THE
GRAAFIAN FOLLICLE. IT ACTIVATES THE UROXINASE-TYPE PLASMINOGEN
ACTIVATOR, COLLAGENASES AND SEVERAL COMPLEMENT ZYMOGENS, SUCH
AS C1 AND C5. IT CLEAVES FIBRIN, FIBRONECTIN, THROMBOSPONDIN,
                                                                                      ACT_SITE
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SEQUENCE
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DOMAIN
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Mammalia; Eutheria; Ceta
Bovidae; Caprinae; Ovia.
                                                                                                                                                                                                                                                                                                    NON TER
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR003966; Prothrombin.
InterPro; IPR001554; Ser protease_Try.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PIR; B61545; B61545.
HSSP; P00747; 5HPG.
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Schaller J., Straub C., Kampfer U.,
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                                                                                                                                                                                                                                 MAIN
                                                                                                                                                                                                                                                                                                                                               Tissue
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                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AS C1 AND C5. IT CLEAVES FIBRIN, FIBRONECTIN, THROMBOSPONDIN, LAMININ AND VON WILLEBRAND PACTOR.

CATALYTIC ACTIVITY: Preferential cleavage: Lys-|-Xaa > Arg-|-Xaa; higher selectivity than trypsin. Converts fibrin into soluble
                                                                                                                                                                                                                                                                                                                                               remodeling;
                   Similarity
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(Rel. 37, Last sequence update)
(Rel. 41, Last annotation update)
(EC 3.4.21.7) (Fragment).
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2; CHYMOTRYPSIN.
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                                                                                                                                                                                                                                                                                                                                                                     protease; Plasma;
                                                                                                                                                              140
>343
17
120
120
341
181
224
                                                                                                                                                                                                                                                                                                                                               Blood coagulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chordata; Craniata; Vertebrata; Euteleostomi; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                   81.9%;
                                                                                           37662
                                                                                           ¥.
                                                                                                                                   SERINE PROTEASE.
CHARGE RELAY SYST
CHARGE RELAY SYST
CHARGE RELAY SYST
                                                                                                                                                                                                                          HEAVY CHAIN I
LIGHT CHAIN I
KRINGLE 4.
KRINGLE 5.
                   Score 416; DB 1; Length 343; Pred. No. 4e-39;
                                                                                           8DF6EBA92D596EE0
                                                                                                                                   E RELAY SYSTEM.
E RELAY SYSTEM.
                                                                                                                                                                                                                                                                                                                                                                       Glycoprotein; Fibrinolysis;
                                                                                                                                                                                                                                                                                                                                               Kringle; Zymogen; Repeat
                                                                                                                                                                                                                                                                            PP
14; Indels
                                                                                           CRC64;
0
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PLAN HRSELT 6
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                                                                                                                                       Pfam; PF00009; trypsin; 1.

PRINTS; PR00722; CHYMOTRYPSIN.

PRINTS; PR007018; KRINGLE:

PRINTS; PR01505; KRTHROMBIN.

ProDom; PD000395; Kringle; 1.

SMART; SM00020; Tryp_SPC; 1.

SMART; PS00021; KRINGLE 1; 1.

PROSITE; PS00021; KRINGLE 2; 1.

PROSITE; PS50070; KRINGLE 2; 1.

PROSITE; PS50070; KRINGLE 2; 1.

PROSITE; PS500140; TRYPSIN DOM; 1.

PROSITE; PS500140; TRYPSIN HIS; 1.

PROSITE; PS00135; TRYPSIN SER; 1.

PROSITE; PS00135; TRYPSIN SER; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P80010;
01-NOV-1991
01-NOV-1991
16-OCT-2001
Tissue 1
NON TER
CHAIN
CHAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE 2052077; PubMed 1946332;

"Schaller J., Straub C., Kaempfer U., Rickli E.E.;

"Complete amino acid sequence of equine miniplasminogen.";

"Complete amino acid sequence of equine miniplasminogen.";

Protein Seq. Data Anal. 4:69-74(1991).

-!- EUNCTION: PLASMIN DISSOLVES THE FIBRIN OF BLOOD CLOTS AND ACTS A PROTEOLYTIC FACTOR IN A VARIETY OF OTHER PROCESSES INCLUDING EMBRYONIC DEVELOPMENT, TISSUE REMODELING, TUMOR INVASION,

AND INFLAMMATION; IN OVULATION IT WEAKENS THE MALLS OF THE GRAAFIAN FOLLICLE. IT ACTIVATES THE URCKINASE-TYPE PLASMINOGEN ACTIVATOR, COLLAGENASES AND SEVERAL COMPLEMENT ZYMOGENS, SUCH AS C1 AND C5. IT CLEAVES FIBRIN, FIBRONECTIN, THROMBOSPONDIN, LAMININ AND VON WILLEBRAND FACTOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR003966; Prothrombin.
InterPro; IPR001254; Ser_protease_Try.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PIR; A61545; A61545.
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Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Equus caballus (Horse)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEROPS; S01.233;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO FIBRIN. ACTIVATED WITH CATALYTIC AMOUNTS OF STREPTOKINASE. MISCELLANBOUS: PLASMIN IS INACTIVATED BY ALPHA-2-ANTIPLASMIN IMMEDIATELY AFTER DISSOCIATION FROM THE CLOT. SIMILARITY: BELONGS TO PEPTIDASE FAMILY SI. PLASMINOGEN SUBPISIMILARITY: BELONGS TO PEPTIDASE FAMILY SI. PLASMINOGEN SUBPISIMILARITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY: Contains at least 1 kringle domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATALYTIC ACTIVITY: Preferential cleavage: Lys-|-Xaa > Arg-|-Xaa;
higher selectivity than trypsin. Converts fibrin into soluble
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HORSE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PF00051; kringle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P00747;
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                                                                                                                  remodeling;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INGPWCYTMNPRKLFDYCDIPLCASS
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(Rel. 20, Last sequence update)
(Rel. 40, Last annotation update)
(EC 3.4.21.7) (Fragment).
   109
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                                                                                                                     protease; Plasma; Glycoprotein; Fibrinolysis;
Blood coagulation; Kringle; Zymogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chordata; Craniata; Vertebrata; Euteleostomi; Perissodactyla; Equidae; Equus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY
   PLASMIN HEAVY CHAIN PLASMIN LIGHT CHAIN KRINGLE 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        86
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RESULT
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                  PLMN MOUSE STANDARD; PR
P20918; QBC1S2; Q91WJ5;
01-FEB-1991 (Rel. 17, Created)
15-SEP-2003 (Rel. 42, Last seque
15-SEP-2003 (Rel. 42, Last annot
Plasminogen precursor (EC 3.4.21
PubMed=12477932;
Strausberg R.L., Feingold B.A., Grouse L.H., Derge J.G.,
Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
Klausner R.D., Collins F.S., Wagner L., Schaefer C.F., Bhat N.K.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
Brownstein M.J., Uddin T.B., Toshiyuki S., Carninci P., Prange C.,
Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
DISULFID
                                                                                                                                                                   Nagaraja R.; "Genomic sequence analysis in the mouse t-complex region."; submitted (FEB-2002) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                  Submitted (FEB-2002)
[3]
                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                    Brathwaite
                                                                                                                                                                                                                                 STRAIN=129/Sv;
                                                                                                                                                                                                                                                                                   MEDLINE=91184812; PubMed=2081600;
Degen S.J., Bell S.M., Schaefer L.A., Elliott R.W.;
"Characterization of the cDNA coding for mouse plass
localization of the gene to mouse chromosome 17.";
                                                                                                                                                                                                                                                                                                                                                                              Mus musculus (Mouse)
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                             FROM N.A.
                                                                                                                                                                                                                                                                        tion of the gene
8:49-61(1990).
                                                                                                                                                    FROM
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                                                                                                                                                                                                                M., Waeltz
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                                                                                                                                                                                                                                                                                                                                                                                Chordata;
Rodentia;
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88
71
71
213
213
113
1151
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273
312
2150
1151
1151
282
282
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80.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
(EC 3.4.21.7) [Contains: Angiostatin].
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BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
INTERCHAIN (BY SIMILARITY).
INTERCHAIN (BY SIMILARITY).
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
CHARGE RELAY SYSTEM (BY SIMILARITY).
CHARGE RELAY SYSTEM (BY SIMILARITY).
CHARGE RELAY SYSTEM (BY SIMILARITY).
STREPTOKINASE-BINDING SITE (PROBABLE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 415; DB 1
Pred. No. 5e-39;
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                                                                                                                                                                                                                                                                                                                                                                                 Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8Y SIMILARITY).
8E9E56B5C5CDBE01 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                    Dudekula
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                                                                                                                                                                                                                                                                                      mouse plasminogen some 17.";
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5 (PROBABLE).
6 (PROBABLE).
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A PROTEOLYTIC FACTOR IN A VARIETY OF BLOOD CLOTS AND ACTS AS A PROTEOLYTIC FACTOR IN A VARIETY OF OTHER PROCESSES INCLUDING EMBRYONIC DEVELOPMENT, TISSUE REMODELING, TUMOR INVASION, EMBRYONIC DEVELOPMENT, TISSUE REMODELING, TUMOR INVASION, EMBRYONIC DEVELOPMENT, TISSUE REMODELING, TUMOR INVASION, EMBRYONIC IT ACTIVATES THE UROKINASE-TYPE PLASMINOGEN ACTIVATOR, COLLAGENASES AND SEVERAL COMPLEMENT ZYMOGENS, SUCH AS CI AND CS. IT CLEAVES FIBRIN, FIBRONECTIN, THROMBOSPONDIN, LAMININ AND VON WILLEBRAND FACTOR.

-I- FUNCTION: ANGIOSTATIN IS AN ANGIOGENESIS INHIBITOR THAT BLOCKS NEOVASCULARIZATION AND GROWTH OF EXPERIMENTAL PRIMARY AND METASTATIC TUMORS IN VIVO.

-I- CATALYTIC ACTIVITY: Preferential cleavage: Lys-|-Xaa > Arg-|-Xaa; higher selectivity than trypsin. Converts fibrin into soluble
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHARACTERIZATION OF ANGIOSTATIN, AND PARTIAL MEDLINE=95042728; PubMed=7525077; O'Reilly M.S., Holmgren L., Shing Y., Chen C. Moses M., Lane W.S., Cao Y., Sage E.H., Folkm "Angiostatin: a novel angiogenesis inhibitor suppression of metastases by a Lewis lung car Cell 79:315-328(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., H Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A Fahey J., Helton B., Ketteman M., Madan A., Rodrigues S., S Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard Glakeeley R.W., Touchman J.W., Green E.D., Dickson M.C., Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D. Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.; "Generation and initial analysis of more than 15,000 full-l and mouse cDNA sequences."
                                                                                                                    EMBL; J04766; AAA50168.1; -. EMBL; AF481053; AAA27156.1; -. EMBL; AF0414773; AAA144773.1; -. EMBL; AY134430; AAA15805.1; -. EMBL; AY134430; AAA15805.1; -. A38514; PLMS.
                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EM the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by and entities requires a license agreement (See http://www.isb-sor send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                 PRODUCTS

PRODUCTS

PRODUCTS

PRODUCTS

PRODUCT CONVERTED INTO PLASMIN BY PLASMINOGEN
ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO
PIBRIN. CANNOT BE ACTIVATED WITH STREPTOKINASE.

PIBRIN. CANNOT BE ACTIVATED WITH STREPTOKINASE.

PIBRIN. CANNOT BE ACTIVATED WITH STREPTOKINASE.

PIBRIN. CANNOT BE ACTIVATED BY ALPHA-2-ANTIPLASMIN IS INACTIVATED FOR THE CLOT.

PIMEDIATELY AFTER DISSOCIATION FROM THE CLOT.

PIMEDIATELY AFTER DISSOCIATION FROM THE CLOT.

PIMEDIATELY AFTER PRESENCE OF THE INHIBITOR, THE ACTIVATION LOSS BOUNDS. WITHOUT THE INHIBITOR, THE TOGETHER BY 2 DISTULFIDE BONDS. WITHOUT THE INHIBITOR, THE ACTIVATION PROPIDES.

PACTIVATION INVOLVES ALSO REMOVAL OF THE ACTIVATION DEPTIDE.

PRODUCT OF THE ACTIVATION OF THE PROPIDES.

PIMILARITY: CONTAINS 5 KRINGLE FAMILY S1. PLASMINOGEN SUBFAMIL.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bannach F.G., Gutierrez A., Parmer R.J., Miles L.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=129/SvJ;
PubMed=12149246;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              stimulated plasminogen gene Chem. 277:38579-38588 (2002).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE=Liver;
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(See http://www.isb-sib.
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Folkman
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HSSP; P00747; 1PMK.

MEROPS; S01.233; -.

MGD; MGI:97620; Plg.

GO; GO:0016506; F:apoptosis activator of GO; GO:0006915; P:apoptosis; IDA.

InterPro; IPR001314; Chymotrypsin.

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R PHAM, FROUGH; KRINGLE.

R PRINTS; PRO0018; KRINGLE.

R PRINTS; PRO0018; KRINGLE.

R PRINTS; PRO0155; PROTHROMBIN.

R PRODOM; PD000395; Kringle; 5.

R PRODOM; PD000395; Kringle; 5.

R PART; SM00130; KR; 5.

N SMART; SM00013; Tryp SPC; 1.

NR SMART; SM00020; Tryp SPC; 1.

NR PROSITE; PS00021; KRINGLE 2; 5.

NR PROSITE; PS00013; TRYPSIN_DOM; 1.

NR PROSITE; PS00134; TRYPSIN_DOM; 1.

NR PROSITE; PS00134; TRYPSIN_SER; 1.

NR PROSITE; PS00135; TRYPSIN_SER; 1.
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Best Local :
                                             Matches
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Pfam; PF00024; PAN; 1.
Pfam; PF00089; trypsin: 1
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1 EQDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGD 60
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IPR003609; I
IPR003966;
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PLASMIN LIGH
KRINGLE 1.
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Pred. No. 2.1e-3
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PLASMIN HEAVY CHAIN A.
ACTIVATION PEPTIDE.
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RA Marti T., Schaller J., Rickli B.E., Schmid K., Kamerling J.P.,
RA Gerwig G.J., van Halbeek H., Vliegenthart J.F.;
Ra Ge
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Schaller J., Marti T., Roesselet S.J., Kaempfer U., Rickli E.E "Amino acid sequence of the heavy chain of porcine plasmin. Cor of the carbohydrate attachment sites with the human and bovine species.";
                         GlycoSuiteDB; P06867; -. GlycoSuiteDB; P06867; -. InterPro; IPR001314; Chymotrypsin. InterPro; IPR000001; Kringle.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=85203907; PubMed=3846533;
Marti T., Schaller J., Rickli E.E.;
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28-FEB-2003
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01-JAN-1988
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                                                                                                                                            HSSP; P00747; 5HPG.
MEROPS; S01.233; -.
                                                                                                                                                                          PIR; S03733; PLPG
HSSP; P00747; 5HPC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eur. J. Biochem. 149:279-285(1985).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Determination of the complete amino-acid sequence
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Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sus scrofa
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                                                                                                                                                                                                                                                MISCELLANEOUS; PLASMIN IS INACTIVATED BY IMMEDIATELY AFTER DISSOCIATION FROM THE SIMULARITY: BELONGS TO PEPTIDASE FAMILY SIMILARITY; Contains 5 kringle domains.
                                                                                                                                                                                                                                                                                                                                                                                         ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO FIBRIN. CANNOT BE ACTIVATED WITH STREPTOKINASE. PTM: N-LINKED GLYCAN CONTAINS N-ACETYLLACTOSAMINE, SIALIC ACID IS CORE FUCOSYLATED. O-LINKED GLYCANS CONSIST OF GAL-GALNAC DISACCHARIDE WITH IS MODIFIED WITH UP TO 2 SIALIC ACID RESIDUES (MICROHETEROGENEITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     products.
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IPR003014; PAN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                   PLASMIN IS INACTIVATED BY ALPHA-2-ANTIPLASMIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     86
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                                                                                                                                                                                                                                                                                                 S1.
                                                                                                                                                                                                                                                                                             PLASMINOGEN SUBFAMILY
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Tremin. Comparison
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nterPro; nterPro;

IPR001254;

Ser\_protease\_Try. le; 5.

IPR003609; Pan\_app.
IPR003966; Prothrombin.

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RESULT
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R Pfam; PF00024; PAN; 1.

R Pfam; PF00024; PAN; 1.

R Pfam; PF00025; CHYMOTRYPSIN.

R PRINTS; PR00722; CHYMOTRYPSIN.

R PRINTS; PR001305; KRINGLE

R PRINTS; PR001305; KRINGLE; 5.

R PCDOm; PD000395; Kringle; 5.

R PCDOm; PD000395; Kringle; 5.

R PCDOm; P000395; Kringle; 5.

R PCOSITE; PS00013; FAN; SPC; 1.

R PROSITE; PS00021; KRINGLE 1; 5.

R PROSITE; PS00013; TRYPSIN_DOM; 1.

R PROSITE; PS00013; TRYPSIN_DOM; 1.

R PROSITE; PS00135; TRYPSIN_SER; 1.
                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                 PLMN_BOVIN S
P06868; Q28162;
01-JAN-1988 (Rel
                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
ACT_SITE
ACT_SITE
                                                                                                 Eukaryota; Metazoa;
Mammalia; Eutheria;
Bovidae; Bovinae; Bo
                           Berglund L., Andersen M.D., Pe "Cloning and characterization Int. Dairy J. 5:593-603(1995).
                                                                                     NCBI_TaxID=9913;
                                                                                                                                                                                                                  BOVIN
                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                    SEQUENCE FROM N.A.
                                                                                                                                 Bos taurus (Bovine).
                                                                                                                                                    Plasminogen
                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CHAIN
SEQUENCE OF 27-812, AND CARBOHYDRATE-LINKAGE MEDLINE=85203906; PubMed=3846532;
                                                         TISSUE=Liver;
                                                                                                                                                              28-FEB-2003
                                                                                                                                                                                                                                                         519
                                                                                                                                                                                                                                                                                               459
                                                                                                                                                                                                                                                                           62
                                                                                                                                                                                                                                                                                                                                       68;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              remodeling;
                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                        NGPWCYTTNPQKLFDYCDVPQCVTS 543
                                                                                                                                                                                                                                                                       NGPWCYTMNPRKLFDYCDIPLCASS
                                                                                                                                                                                                                                                                                              EDCMFGNGKRYRGKRATTVAGVPCQEWAAQEPHRHSIFTPETNPRAGLEKNYCRNPDGDD
                                                                                                                                                                                                                                                                                                                    QDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTF1PGTNKWAGLEKNYCRNPDGDI
                                                                                                                                                 (Rel. 06, Created)
(Rel. 35, Last sequence update)
(Rel. 41, Last annotation update)
precursor (EC 3.4.21.7).
                                                                                                                                                                                                                                                                                                                                                                               790
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561
166
256
358
461
645
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                                                                                                                                                                                                      STANDARD;
                                                                                                    Bos.
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243
333
435
602
740
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Blood
                                                                                                           Chordata; Craniata; Vertebrata; Euteleostomi; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                88592
                                                                                                                                                                                                                                                                                                                                                  80.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               coagulation;
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                                      Petersen
on of the
                                                                                                                                                                                                                                                                                                                                       5
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PLASMIN LIGHT CHAIN B.
SERINE PROTEACE
                                                                                                                                                                                                                                                                                                                                                  Score 409;
Pred. No. 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                              KRINGLE 1.
KRINGLE 2.
KRINGLE 3.
KRINGLE 4.
KRINGLE 5.
                                                                                                                                                                                                                                                                                                                                                                                         N-LINKED (GLCNAC...).
/FTId=CAR 000019.
O-LINKED (GALNAC...).
/FTId=CAR_000020.
                                                                                                                                                                                                                                                                                                                                                                                                                                CHARGE RELAY SYSTEM.
CHARGE RELAY SYSTEM.
                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                               F04EA06E74BCD58E CRC64;
                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                            98
                                      T.E.;
bovine
                                                                                                                                                                                                      812
                                                                                                                                                                                                                                                                                                                                                  DB 1;
.7e-38;
                                                                                                                                                                                                      B
                                      plasminogen
                                                                                                                                                                                                                                                                                                                                        12;
                                                                                                                                                                                                                                                                                                                                                         Length 790;
                                                                                                            Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                        Indels
                                       cDNA.";
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MARTIT, Schaller J., Rickli E.E., Schmid K., Kamerling J.P.,
A Gerwig G.J., van Halbeek H., Vliegenthart J.P.;
A Gerwig G.J., van Halbeek H., Vliegenthart J.P.;
The N- and O-linked carbohydrate chains of human, bovine and porcine
plasminogen. Species specificity in relation to sialylation and
trucosylation patterns.";
LEUT. J. Biochem. 173:57-63 (1988).
LEUT. J. Biochem. 173:57-63 (1988).
C -1- FUNCTION: PLASMIN DISSOLVES THE FIBRIN OF BLOOD CLOTS AND ACTS AS
C A PROTECLYTIC FACTOR IN A VARIETY OF OTHER PROCESSES INCLUDING
C EMBRYONIC DEVELOPMENT, TISSUE REMODELING, TUMOR INVASION,
C EMBRYONIC DEVELOPMENT, TISSUE REMODELING, TUMOR INVASION,
C AND INFLAMMATION; IN OVULATION IT WEAKENS THE WALLS OF THE
C GRAAFIAN FOLLICLE. IT ACTIVATES THE UROKINASE-TYPE PLASMINOGEN
ACTIVATOR, COLLAGENASES AND SEVERAL COMPLEMENT ZYMOGENS, SUCH
AS CI AND CS. IT CLEARAND FACTOR.
C AS CI AND CS. IT CLEARAND FACTOR.
C LAMININ AND VON WILLEBRAND FACTOR.
C LAMININ AND VON WILLEBRAND FACTOR.
C -1- CATALYTIC ACTIVITY: Preferential cleavage: Lys-|-Xaa > Arg-|-Xaa;
This control of the control of th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kampfer U., Rickli E.E.;
"Complete amino acid sequence of human plasminogen.";
Eur. J. Biochem
Pfam; PF00051; kringle; 5.
Pfam; PF00024; PAN; 1.
Pfam; PF00089; trypsin; 1.
PRINTS; PR00722; CHYMOTRYPSIN.
PRINTS; PR00018; KRINGLE.
PRINTS; PR00018; KRINGLE.
PRINTS; PR000305; RROTHROMBIN.
ProDom; PD000395; Kringle; 5.
SMART; SM00130; KR; 5.
SMART; SM00020; Tryp_SPC; 1.
                                                                                                                                                                                                                                                                                                                                  MEROPS; S01.233; -.
GlycoSuiteDB; P06868; -.
InterPro; IPR001311; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR003014; PAN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This
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                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; X79402; CAA55939.1;
EMBL; K02935; AAA30714.1;
PIR; S45046; PLBO.
HSSP; P00747; 2PK4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way mode by and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          human and bovine plasminogen.";
Biochemistry 23:4243-4250(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Malinowski D.P., Sadler J.E., Davie E.W., "Characterization of a complementary deoxyribonucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                  InterPro; IPR003609;
InterPro; IPR003966;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            between
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                                                                                                                                                                                                                                     nterPro; IPR001254; Ser protease Try. fam; PF00051; kringle; 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRODUCTS.

PRODUCTS.

ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO FIBRIN. CANNOT BE ACTIVATED WITH STREPTOKINASE.

PTM: N-LINKED GLYCAN CONTAIN N-ACETYLLACTOSAMINE AND SIALIC ACID.

O-LINKED GLYCANS CONSIST OF GAL-GALNAC DISACCHARIDE WITH IS MODIFIED WITH UP TO 2 SIALIC ACID RESIDUES (MICKOHETEROGENEITY).

MISCELLANEOUS: PLASMIN IS INACTIVATED BY ALPHA-2-ANTIPLASMIN IMMEDIATELY AFTER DISSOCIATION FROM THE CLOT.

SIMILARITY: BELONGS TO PEPTIPLASE FAMILY S1. PLASMINOGEN SUBFAMIL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OF 706-812 FROM N.A.
85023311; PubMed=6148961;
                                                                                                            PROTHROMBIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         149:267-278 (1985)
                                                                                                                                                           CHYMOTRYPSIN
                                                                                                                                                                                                                                                                                     Pan_app.
Prothrombin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dannegger-Muller G.A.K., Rosselet S.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        plasminogen. Comparison with
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RESULT 10
PLMN_ERIEU
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Best Local S
Matches 67
                                                                                                                                                                                                                        PLMN ERIEU
Q29485;
01-NOV-1997
01-NOV-1997
28-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                     ACT_SITE
ACT_SITE
ACT_SITE
CONFLICT
CONFLICT
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SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Signal
Signal
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PROSITE;
PROSITE;
PROSITE;
PROSITE;
Lawn R.M.;
Submitted (FEB-1997) to the EMBL/GenBank/DDBJ databases.
SIDDELTION: PLASMIN DISSOLVES THE FIBRIN OF BLOOD CLOTS AND ACTS
A PROTECLYTIC FACTOR IN A VARIETY OF OTHER PROCESSES INCLUDING EMBRYONIC DEVELOPMENT, TISSUE REMODELING, TUMOR INVASION,
                                                                                                                                                                       Erinaceus europaeus
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hydrolase;
                                                                     Lawn R.M., Boonmark N.W., Schwartz K., Lindahl G.E., Byrne C.D., Fong K.J., Meer K., Patthy L.; "The recurring evolution of lipoprotein(a). Insights hedgehog apolipoprotein(a)."; J. Biol. Chem. 270:24004-24009(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tissue
                                                                                                                                                            NCBI_TaxID=9365;
                                                                                                                                                                                                               Plasminogen
                                                   REVISIONS.
                                                                                                                        MEDLINE=96025778; PubMed=7592597;
                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                   SSUE=Liver;
                                                                                                                                                                                                                                                                                                                 542
                                                                                                                                                                                                                                                                                                                                     61 INGPWCYTMNPRKLEDYCDIPLCASS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        remodeling;
                                                                                                                                                                                                                                                                                                                                                                    1 EQDCMFGNGKGYRGKKATTVTGTFCQEWAAQEPHRHSTFIFGTNKWAGLEKNYCRNPDGD
                                                                                                                                                                                                                                                                                                                                                                                               67;
                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PS500021;
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                                                                                                                                                                                                                                                                                                                  VNGPWCYTMNPRKPFDYCDVPQCESS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                 624
667
762
335
516
744
                                                                                                                                                                                                                        (Rel. 35, Created)
(Rel. 35, Last seq
(Rel. 41, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              365
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                                                                                                                                                                                                                                                                STANDARD;
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KRINGLE 2; 5.

TRYPSIN DOM; 1.

TRYPSIN THIS; 1.

TRYPSIN TER ; 1.

TRYPSIN SER; 1.

TRYPSIN SER; 1.

Protease; Plasma; Glycoprotein; Fibrinolysis;

protease; Repeat;

; Blood coagulation; Kringle; Zymogen; Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          624
762
335
516
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812
583
812
188
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359
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315
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                                                                                                                                                                       (Western European hedgehog).
Chordata; Craniata; Vertebrata; Euteleostomi;
Insectivora; Erinaceidae; Erinaceinae; Erinaceus.
                                                                                                                                                                                                                                                                                                                                                                                                         79.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                       91216
                                                                                                                                                                                                              Last sequence up., Last annotation of (EC 3.4.21.7).
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                                                                                                                                                                                                                                                                                                                                                                                                                                     CHARGE RELAY SYSTEM.
CHARGE RELAY SYSTEM.
CHARGE RELAY SYSTEM.
N -> D (IN REF. 2).
Q -> H (IN REF. 2).
P -> L (IN REF. 3).
T -> R (IN REF. 3).
T -> R (IN REF. 3).
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CHARGE RELAY SYSTEM.
CHARGE RELAY SYSTEM.
CHARGE RELAY SYSTEM.
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PLASMIN L1
KRINGLE 1.
KRINGLE 2.
KRINGLE 3.
KRINGLE 4.
KRINGLE 5.
                                                                                                                                                                                                                                                                                                                                                                                                          Score 406;
Pred. No. 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PLASMINOGEN
                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                  567
                                                                                                                                                                                                                                                                                                                                     86
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                                                                                                                                                                                                                                                                                                                                                                                                          DB 1;
.3e-37;
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                                                                                                                                                                                                                                                                                                                                                                                                  14; Indels
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Query Match
Best Local S
Matches 66
                                                                                                                                                                                                                                                                                                           PRINTS; PRO0722; CHYMOTRYPSIN.
PRINTS; PRO0018; KRINGLE.
PRINTS; PRO10018; KRINGLE.
PRINTS; PRO10018; PROTROMBIN.
PRODOM; PD000395; Kringle; S.
SMART; SM00130; KR; S.
SMART; SM00130; KR; S.
SMART; SM00130; TYPE SPC; 1.
SMART; SM00020; TYPE SPC; 1.
PROSITE; PS00021; KRINGLE 1; S.
PROSITE; PS000131; TRYPSIN_DOM; 1.
PROSITE; PS00134; TRYPSIN_HIS; 1.
PROSITE; PS00134; TRYPSIN_HIS; 1.
PROSITE; PS00135; TRYPSIN_HIS; 1.
PROSITE; PS00134; TRYPSIN_HIS; 1.
                                                         DOMAIN
DOMAIN
DOMAIN
DOMAIN
ACT_SITE
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ACT_SITE
CARBOHYD
SEQUENCE
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SIGNAL
CHAIN
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                                                                                                                                                                                                   CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                             CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR003014; PAN.
InterPro; IPR003069; Pan app.
InterPro; IPR003966; Prothrombin.
InterPro; IPR001254; Ser_protease_Try.
Pfam; PF00051; kringle; 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; U33171; AAC48717.1; -. PIR; I46260; I46260.
                                                                                                                                                                                                                                                                                     Tissue
                                                                                                                                                                                                                                                                                                  Hydrolase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEROPS; S01.233;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            s SWISS-PROT entry is copyright. It is produced through a collab ween the Swiss Institute of Bioinformatics and the EMBL outst European Bioinformatics Institute. There are no restrictions by non-profit institutions as long as its content is in ified and this statement is not removed. Usage by and for contified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TY FIBRIN. CANNOT BE ACTIVATED WITH STREPTOKINASE. MISCELLANGOUS: PLASMIN IS INACTIVATED BY ALPHA-2-ANTIPLASMIN IMBEDIATELY AFTER DISSOCIATION FROM THE CLOT. SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFASIMILARITY: Contains 5 kringle domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  products.
ENZYME REGULATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LAMININ AND VON WILLEBRAND FACTOR.

CATALYTIC ACTIVITY: Preferential cleavage: Lys-|-Xaa > Arg-|-Xaa;
higher selectivity than trypsin. Converts fibrin into soluble
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AND INFLAMMATION; IN OVULATION IT WEAKENS THE WALLS OF THE GRAAFIAN FOLLICLE. IT ACTIVATES THE UNCKINASE-TYPE PLASMINOGEN ACTIVATOR, COLLAGENASES AND SEVERAL COMPLEMENT ZYMOGENS, SUCH AS C1 AND C5. IT CLEAVES FIBRIN, FIBRONECTIN, THROMBOSPONDIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P00747;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PF00089; trypsin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PF00051; kringle; PF00024; PAN; 1.
                                                                                                                                                                                                                                                                                     remodeling;
                 Similarity
                                                         339
                                                                                                                                                                                                                                                                                     Serine protease; Plasma; Glycoprotein; Fibrinolysis;
deling; Blood coagulation; Kringle; Zymogen; Repeat;
                                                                                     1
20
20
583
583
1103
1185
275
482
662
760
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                                                         339 I
90902 MW;
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810
582
810
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181
181
156
352
352
760
                76.4%;
  Score 388; DB
Pred. No. 1.3e
3; Mismatches
                                                                      KRINGLE 5
CHARGE RECHARGE RECHARGE RECHARGE RECHARGE RECHARGE
                                                                                                                               KRINGLE 1.
KRINGLE 2.
KRINGLE 3.
KRINGLE 4.
KRINGLE 5.
                                                                                                                                                                                                                PLASMIN HEAVY CHAIN
PLASMIN LIGHT CHAIN
                                                                                                                                                                                                                                            BY SIMILARITY. PLASMINOGEN.
                                                                                                                                                                                                    SERINE
                                                       CHARGE RELAY SYSTEM.
CHARGE RELAY SYSTEM.
CHARGE RELAY SYSTEM.
N-LINKED (GLCNAC. . .) (POT 8E75780946017A16 CRC64;
                 388;
No. 1.
                                                                                                                                                                                                    PROTEASE.
                 DB 1;
.3e-35;
                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PLASMINOGEN SUBFAMILY.
                                                                                                                                                                                                                   B≯
                                                                                                                                                                                                                 (BY SIMILARITY). (BY SIMILARITY).
                                                                          (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          collaboration
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Conservative

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Indels,

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Gaps

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RESULT 11
PLMN_RAT
     S
PRINTS; PRO0018; KRĪNGLE.
PRINTS; PRO1505; PROTHROMBIN.
PRODOM; PD000395; Kringle; 2.
SMART; SM00130; KR; 1.
PROSITE; PS00021; KRINGLE 1; 1.
PROSITE; PS50070; KRINGLE 2; 2.
PROSITE; PS50240; TRYPSIN_DOM; PAPROSITE; PS00134; TRYPSIN_HIS; PAPROSITE; PS00135; TRYPSIN_SER; PAPROSITE; PAPROSITE; PS00135; TRYPSIN_SER; PAPROSITE; PS00135; TRYPSIN_SER; PAPROSITE; PS00135; PAPROSITE; PS00135; PAPROSITE; PAPROSITE; PS00135; PAPROSITE; PS001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PLMN RAT
Q01177;
01-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  receptor site for plasminogen.";
J. Biol. Chem. 266:10825-10829(1991).
-i- FUNCTION: PLASMIN DISSOLVES THE FIBRIN OF BLOOD CLOTS AND ACTS A PROTECLYTIC FACTOR IN A VARIETY OF OTHER PROCESSES INCLUDING EMBRYONIC DEVELOPMENT, TISSUE REMODELING, TUMOR INVASION, AND INFLAMMATION; IN OVULATION IT WEAKERS THE WALLS OF THE GRAAFIAN FOLLICLE. IT ACTIVATES THE UROXINASE-TYPE PLASMINOGEN ACTIVATOR, COLLAGENASES AND SEVERAL COMPLEMENT ZYMOGENS, SUCH ASS C1 AND C5. IT CLEAVES FIBRIN, FIBRONECTIN, THROMBOSPONDIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the E the Buropean Bioinformatics Institute. There are no rest use by non-profit institutions as long as its content modified and this statement is not removed. Usage by an entities requires a license agreement (See http://www.isb-or send an email.to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                HSSP; P00747; 1PMK.
MEROPS; S01.233; -.
                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; M62832; AAA41884.1; -. PIR; A40522; A40522.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Identification of the rat Heymann nephritis autoantigen (GP330) as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kanalas J.J., Makker
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28-FEB-2003
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                                                                                                                                                                                                                                                                                                                                      InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Products.

ENZYME REGULATION: CONVERTED INTO PLASMIN BY PLASMINOGEN
ACTIVATORS, BOTH PLASMINOGEN AND ITS ACTIVATOR BEING BOUND TO
FIBRIN. CANNOT BE ACTIVATED WITH STREPTOKINASE.

MISCELLANEOUS: PLASMIN IS INACTIVATED BY ALPHA-2-ANTIPLASMIN
IMMEDIATELY AFTER DISSOCIATION FROM THE CLOT.

SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY.
SIMILARITY: Contains 5 kringle domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LAMININ AND VON WILLEBRAND FACTOR.

CATALYTIC ACTIVITY: Preferential cleavage: Lys-|-Xaa > Arg-|-Xaa; higher selectivity than trypsin. Converts fibrin into soluble
                                                                                                                                                                                                                                                     PF00051; kringle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
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IPR003966; Prothrombin.
IPR001254; Ser protease_Try.
0051; kringle; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (Rel. 25, Created)
(Rel. 25, Last sequence update)
(Rel. 41, Last annotation update)
(EC 3.4.21.7) (Fragment).
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RESULT 12
HGFL_HUMAN
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Matches 41
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DISULFID
DISULFID
NON TER
SEQUENCE
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P26927; Q13350; Q14870;
01-AUG-1992 (Rel. 23, Created)
01-AUG-1992 (Rel. 23, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Hepatocyte growth factor-like protein precursor (Macrophage stimulatory protein) (MSP) (Macrophage stimulating protein)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NON TER
                                                                                                                                                                                                Yoshimura T., Yuhki N., Mang M.H., Skeel A., Leonard E.J.;
Yoshimura T., Yuhki N., Mang M.H., Skeel A., Leonard E.J.;
Yoshimura T., Yuhki N., Mang M.H., Skeel A., Leonard E.J.;

"Cloning, sequencing, and expression of human macrophage stimulating protein (MSP, MST1) confirms MSP as a member of the family of kringle proteins and locates the MSP gene on chromosome 3.";

J. Biol. Chem. 268:15461-15468(1993).

-I- FUNCTION: PROBABLY HAS NO PROTEOLYTIC ACTIVITY, SINCE CRUCIAL AA CHARACTERISTIC OF SERINE PROTEASES CATALYTIC SITES ARE NOT
                                                                                                                                                                                                                                                                                                                                                              Han S., Stuart L.A., Friezner Degen S.J.; "Characterization of the DNF15S2 locus on human chromosome identification of a gene coding for four kringle domains wi homology to hepatocyte growth factor."; Biochemistry 30:9768-9780(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MST1 OR HGFL.
Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HUMAN
                                                                                                                                                                                                                                                                                                      MEDLINE=93340141; PubMed=8393443;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EQUENCE FROM N.A.
                                                                                                                                          PTM: MAY BE CLEAVED AFTER AA 484, TO YIELD A TWO-CHAIN MOLECULE HELD TOGETHER BY DISULFIDE BONDS, OR TWO SEPARATE POLYPEPTIDES. SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMI
                                                                                                                            SIMILARITY: Contains 4 kringle domains.
                                                                                                                                                                                      CONSERVED.
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                                                                                                                                                                    MAY BE CLEAVED AFTER AA 484,
                                                                                                                                                                                                                                                                                                                                     FROM N.A.
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112
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chordata; Craniata; Vertebrata; Euteleostomi; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18401 MW;
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48.2%;
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KRINGLE 4 (BY SIMILARITY).

KRINGLE 5 (BY SIMILARITY).

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Pred. No. 3.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 77A54214C49D010C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kringle; Repeat.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .3e-20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
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                                                                                                                                                                                                                                                                                                                                                                                              me 3:
                                                                                      TRMB
                                                                                                  a collaboration
                                                                                                                                                                                                                                                             of kringle
                                                                                                                                             SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
                                                                                      outstation
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entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).

restrictions and

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Best Loc
Matches
       Query Match
Best Local &
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InterPro; IPR001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR003014; PAN.
InterPro; IPR003609; Pan_app.
InterPro; IPR003609; Pan_app.
InterPro; IPR003669; Prothrombin.
                                                                                                                                                                                                                                                                                                                                                                                                              PEAM; PF00089; trypsin; 1.

PRINTS; PR00722; CHYMOTRYPSIN.

PRINTS; PR00722; KRINGLE.

PRINTS; PR00105; KRINGLE.

PRINTS; PR01505; PROTHROMBIN.

ProDom; PD000395; Kringle; 4.

SMART; SM00130; KR; 4.

SMART; SM00473; PAN AP; 1.

SMART; SM00020; Tryp_SPC; 1.

PROSITE; PS000021; KRINGLE 1; 4.

PROSITE; PS50070; KRINGLE 2; 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; M74178; AAA50165.1;
EMBL; U37055; AAC50471.1;
EMBL; L11924; AAA59872.1;
PIR; A40331; A47136.
HSSP; P00747; 2PK4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00051;
Pfam; PF00024;
Pfam; PF00089;
                                                                                                                      DISULFID
CARBOHYD
CARBOHYD
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DISULFID
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DISULFID
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DOMAIN
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Genew; HGNC:7380; MST1.
                                                               VARIANT
                                                                                   VARIANT
                                                                                                   VARIANT
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Similarity
43; Conserv
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711
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Conservative
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BY SIMILARITY.
                                   /FTId=VAR 006632.
E -> K (IN dbSNP:7798).
/FTId=VAR 014569.
L -> F (IN REF. 2).
L -> F (EN REF. 2).
Score 241.5; DB 1;
Pred. No. 2.5e-19;
1; Mismatches 28;
                                                                                                                                                                                                                                                                                                                                        KRINGLE 1.
KRINGLE 2.
KRINGLE 3.
KRINGLE 4.
                                                                                    /FTId=VAR_006631.
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                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL
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                                      CRC64;
                 Length 711;
Indels
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Gaps
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DT 01-AUG
DT 11-SEP
DE HEPATO
DE STIMUL
GN MST1 0
OC EUKARY
OC MAMMAL
RX MEDLAIN
RX METANTS
RX MARRY;
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                                                                                                                                                                                                                                                                 EMBL; M74180; AAA50166.1; -.
EMBL; M74181; AAA50167.1; -.
PIR; A40332; A40332.
HSSP; P00747; 1KRN.
MEROPS; S01.975; -.
MCD; MGI:96080; Mst1.
                 Pfam; PPÓ0051; kringle; 4.
Pfam; PPO0024; PAN; 1.
Pfam; PPO0089; crypsin; 1.
Pfam; PP00089; crypsin; 1.
PRINTS; PR00722; CHYMOTRYPSIN.
PRINTS; PR01018; KRINGLE.
PRINTS; PR01505; PROTHROMBIN.
PRODOm; PD000395; Kringle; 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P26928;
01-AUG-1992
01-AUG-1992
                                                                                                                                                     InterPro;
InterPro;
InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                       between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for comentities requires a license agreement (See http://www.isb-sib.ch/aror send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Priezner Degen S.J., Stuart L.A., Han S., Jamison C.S., "Characterization of the mouse cDNA and gene coding for a growth factor-like protein: expression during development. Biochemistry 30:9781-9791 (1991).

-I- FUNCTION: PROBABLY HAS NO PROTECLYTIC ACTIVITY, SINCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-AUG-1992 (Rel. 23, Created)
01-AUG-1992 (Rel. 23, Last sequence up
15-SEP-2003 (Rel. 42, Last annotation
Hepatocyte growth factor like protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN=BALB/c; TISSUE=Liver;
MEDLINE=92002017; PubMed=1832957;
                                                                                                                                                                                                           InterPro; IPR001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR003014; PAN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             stimulatory protein) (MSP).
MST1 OR HGFL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY: Contains 4 kringle domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JUST BEFORE BIRTH THE LEVEL INCREASTRABLE AFTERWARDS.
PTM: MAY BE CLEAVED AFTER AA 488,
HELD TOGETHER BY DISULFIDE BONDS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEVELOPMENTAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE SPECIFICITY: LIVER. LOWER LEVELS IN LUNG, ADRENAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FUNCTION: PROBABLY HAS NO PROTEOLYTIC ACTIVITY, CHARACTERISTIC OF SERINE PROTEASES CATALYTIC SI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CONSERVED
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOUSE
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                                                                                                                                                 IPR003609; Pan_app.
IPR003966; Prothrombin.
IPR001254; Ser_protease_Try.
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01-JAN-1990
28-FEB-2003
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P14417;
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SEQUENCE
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Mammalia; Eutheria; Prim
Cercopithecinae; Macaca.
                                                                                                                                                                                                                                                                                                                                                                                                                   MACMU
SEQUENCE FROM N.A.
MEDLINE=89174660; PubMed=2925643;
Tomlinson J.E., McLean J.W., Lawn
"Rhesus monkey apolipoprotein(a).
                                                                                                                                                                                          Macaca mulatta (Rhesus macaque)
Eukaryota; Metazoa; Chordata; C
                                                                                                                                                                                                                                                                   Apolipoprotein(a)
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SMART; SM00020; Tryp SPG; 1.
PROSITE; PS000021; KRINGLE 1; 4.
PROSITE; PS50070; KRINGLE 2; 4.
PROSITE; PS50240; TRYPSIN DOM; 1.
Kringle; Glycoprotein; Serine pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
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ein(a) (EC
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                                                                                                                                                                                                                                                              Last sequence update)
Last annotation update)
3.4.21.-) (Apo(a)) (Lp(a))
                                                                                                                                                                                                                                                                                                                                          Created)
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BY SIMILARITY.
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KRINGLE 2.
KRINGLE 3.
KRINGLE 4.
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POTENTIAL.
HEPATOCYTE GROWTH FACTOR-LIKE PROT
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Sequence,
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Matches 42
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Pfam; PF00089; trypsin; 1.

PRINTS; PR00722; CHYMOTRYPSIN.

PRINTS; PR00722; CHYMOTRYPSIN.

PRINTS; PR00018; KRINGLE.

ProDom; PD000395; Kringle; 10.

SMART; SM00010; KR; 10.

SMART; SM00010; Tryp SP0; 1.

PROSITE; PS00021; KRINGLE 1; 10.

PROSITE; PS00021; KRINGLE 2; 10.

PROSITE; PS50070; KRINGLE 2; 10.

PROSITE; PS500134; TRYPSIN_HIS; FALSE NEG.

PROSITE; PS00134; TRYPSIN_HIS; FALSE NEG.

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or send an email to license@isb-sib.ch).
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                                                                                                                  SEQUENCE
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HSSP; P00747; 2PK4.
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InterPro; IPR000001; Kringle.
InterPro; IPR001254; Ser_protease_
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SIMILARITY: BELONGS TO PEPTIDASE FAMILY S1. PLASMINOGEN SUBFAMILY.
SIMILARITY: Contains at least 10 kringle domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                decorin (By similarity).
PTM: N- and O-glycosylated (By similarity)
DISEASE: Elevated plasma concentrations of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             autoproteolysis. Inhibits tissue-type plasminogen activator 1. Lp(a) may be a ligand for megalin/Gp 330. SUBUNIT: Disulfide-linked to apo-B100. Binds to fibronectin and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FUNCTION: Apo(a) is the main constituent of lipoprotein(a) (Lp(a)). It has serine proteinase activity and is able of
 724
                                                           42;
                             N
                                                                         Similarity
QDCYHGDGQSYRGSFSTTVTGRICQSWSSMTPHWHQRTIBYYPN---
                           QDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHS---TFIPGTNKWAGLEKNYCRNPD
                                                                                                                                                                                                                                                                                                              Repeat;
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1191
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163
277
277
391
505
619
725
839
953
                                                           Conservative
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                                                                                                                  AA,
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                                                                                                                                                127
241
355
469
583
697
803
917
1031
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Pred. No. 2.16
2; Mismatches
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                                                 DB 1,
2.1e-18;
23;
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GDINGPWCYTMNPRKLFDYCDIPLC

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TISSUE=Leukocyte;
MEDLINE=91025062; PubMed=2145836;
MEDLINE=91025062; PubMed=2145836;
MEDLINE=91025062; PubMed=2145836;
MEDLINE=91025062; PubMed=2145836;
MEDLINE=91025062; Shimonishi M., Nishizawa Seki T., Shimizu S.;
Asami O., Hagiya M., Nakamura T., Shimizu S.;
"Isolation and expression of cDNA for different forms of "Isolation and expression of cDNA for different forms of growth factor from human leukocyte.";
"Incham Riophys. Res. Commun. 172:321-327(1990).
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P14210; Q9BYI
01-JAN-1990
                SEQUENCE OF 249-695 FROM N.A.
MEDLINE=91369928; PubMed=1832556;
Miyazawa K., Kitamura N., Kitamura N.;
"Structural organization and the transcription human hepatocyte growth factor gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nakamura T., Nishizawa T.,
Sugimura A., Tashiro K., S
"Molecular cloning and exp
Nature 342:440-443(1989).
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Miyazawa K., Tsubouchi H., Naka D.,
Arakaki N., Nakayama H., Hirono S.,
Gohda E., Daikuhara Y., Kitamura N.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
MEDLINE=91340155; PubMed=1831432;
Seki T. Hagiya M., Shimonishi M., Nak
"Organization of the human hepatocyte
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01-AUG-1991 (Rel. 19, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
Hepatocyte growth factor precursor (Scatter factor) (SF)
                                                                                                                                                                                                                                                                                      "Evidence for the identity of human hepatocyte growth factor."; Proc. Natl. Acad. Sci. U.S.A. 88:700
                                                                                                                                                                                                                                                                                                                                                                                          TISSUE-Embryonic fibroblast;
MEDLINE-91334393; PubMed-1831266;
Weidner K. M., Arakaki N., Hartmann G.,
Rieder H., Fonatsch C., Tsubouchi H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa;
Mammalia; Eutheria;
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09BYL9; 09UDU6;
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                                                                                                                                                                                                                                                                                        U.S.A. 88:7001-7005(1991)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ., Shimizu S.; expression of human hepatocyte growth
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                                                                                                                                                                                  Angell S.;
the EMBL/GenBank/DDBJ
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Sakiyama O.,
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Hishida T., Daikuhara
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Takahashi K.,
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EMBL;

D90322;

BAA14348.1; BAA14348.1;

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MEDLINE=99036858; PubMed=9817840; Ultsch M., Lokker N.A., Godowski P.J., "Crystal structure of the NK1 fragment factor at 2.0-A resolution."; Structure 6:1383-1393(1998).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=92331602; PubMed=1321034;
Lokker N.A., Mark M.R., Luis E.A., Bennett G.L., Robbins K.A.,
Baker J.B., Godowski P.J.;
"Structure-function analysis of hepatocyte growth factor:
identification of variants that lack mitogenic activity yet retain
high affinity receptor binding.";
EMBO J. 11:2503-2510(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Yoshiyama Y., Arakakai N., Naka D.,
Nakayama H., Gohda E., Kitamura N.,
Hishida T., Daikuhara Y.;
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MEDLINE-98154323; PubMede-9493272;

Zhou H., Mazzulla M.J., Kaufman J.D., Stahl S.J.,

Rubin J.S., Bottaro D.P., Byrd R.A.;

"The solution structure of the N-terminal domain
factor reveals a potential heparin-binding site."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Hepatocyte growth factor is linked on the alpha chain.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Shimizu N., Hara H., Sogabe T.,
Nakamura T., Shimizu S.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Identification of the N-terminal residue of the native and recombinant human hepatocyte growth fa Biochem. Biophys. Res. Commun. 175:660-667(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYDRATE-LINKAGE SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS)
                                                                                                                                                                                                                                                                                                                                       FUNCTION: HGF IS A POTENT MITOGEN FOR MATURE PARENCHYMAL HEPATOCYTE CELLS, SEEMS TO BE AN HEPATOTROPHIC FACTOR, AND AS GROWTH FACTOR FOR A BROAD SPECTRUM OF TISSUES AND CELL IT HAS NO DETECTABLE PROTEASE ACTIVITY.
SUBUNIT: DIMER OF AN ALPHA CHAIN AND A BETA CHAIN LINKED B DISULFIDE BOND.
                                                                                                                                                                                                                                                                                                                  SIMILARITY: Contains
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Contains 4 kringle do
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                                                                                                                                                                                                                                                                                                                  domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Takahashi
Tsubouchi
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                                                                                                                                                                                                                        noved. Usage by and for (See http://www.isb-sib.
                                                                                                                                                                                                                                                  There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                de Vos A.M.;
of human hepatocyte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35-210
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                                                                                                                                                                                                                                                                                                                               S1.
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Ishii T.,
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L outstation -
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DR GO; GO:0008083; F:growth factor activity; NAS.

DR GO; GO:0007067; P:mitosis; NAS.

DR Interpro; IPR001014; Chymotrypsin.

DR Interpro; IPR001014; PAN.

DR Interpro; IPR003014; PAN.

DR Interpro; IPR003509; Pan_app.

DR Interpro; IPR001254; Ser_protease_Try.

DR Pfam; PF00024; PAN; 1.

DR Pfam; PF00024; PAN; 1.

DR Pfam; PF00089; trypsin; 1.

DR Pfam; PF00089; trypsin; 1.

DR PRINTS; PR00018; KRINGLE; 4.

DR PRINTS; PR00018; KRINGLE; 4.

DR PRINTS; PR00018; KRINGLE; 1.

DR PRODOM; PD000395; Kringle; 1.

DR PROSTITE; PS00020; Tryp_SPC; 1.

DR SMART; SM00130; KR; 4.

DR SMART; SM00120; Tryp_SPC; 1.

DR PROSTITE; PS00021; KRINGLE; 1; 4.

DR PROSTITE; PS00021; KRINGLE; 1; 4.

DR PROSTITE; PS00020; TRYPSIN DOM; 1.

DR PROSTITE; PS00020; TRYPSIN DOM; 1.

REPROSTITE; PS00020; TRYPSIN DOM; 1.

DR PROSTITE; PS00020; TRYPSIN DOM; 1.
                                                                                                                                                                             Query Match
Best Local S
Matches 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; X16323; CAA34387.1; -.
EMBL; M73239; AAA64239.1; -.
EMBL; M73240; AAA64239.1; -.
EMBL; M73240; AAA64239.1; -.
EMBL; M7596; AAC71655.1; -.
EMBL; M75978; AAG53460.1; JOINED EMBL; M75973; AAG53460.1; JOINED EMBL; M75974; AAG53460.1; JOINED EMBL; M75975; AAG53460.1; JOINED EMBL; M75976; AAG53460.1; JOINED EMBL; M75977; AAG53460.1; JOINED EMBL; M75978; AAG53460.1; JOINED EMBL; M75981; AAG53460.1; JOINED EMBL; M75981; AAG53460.1; JOINED EMBL; M75982; AAG5346
                                                                                                                                                                                                                                                                   CHAIN
CHAIN
MOD RES
DOMAIN
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Growth factor; Kringle Signal; 3D-structure; SIGNAL 1 3:
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                                                                                     185
36;
                                                                                                                                                                       h 46.2%; Score 234.5; DB 1; Length 728; Similarity 43.4%; Pred. No. 1.5e-18; 36; Conservative 19; Mismatches 27; Indels 1
                                                                                                                                                                                                                                                                      31
494
728
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KRINGLE 1.

KRINGLE 2.

KRINGLE 3.

KRINGLE 4.

SERINE PROT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HEPATOCYTE GROWTH FACTOR ALPHA CHAIN. HEPATOCYTE GROWTH FACTOR BETA CHAIN. PYRROLIDONE CARBOXYLIC ACID.
                                                                                                                                                                                                                                                                                                                                    PROTEASE-LIKE
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Search completed: January 12, 2004, 17:23:58 Job time: 8.43609 secs

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Result
No.
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Maximum Match 100%
Listing first 45 summaries
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Maximum DB seq length: 200000000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
  6
9
10
11
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15
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 501
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413
404
404
379
285
250.5
246.5
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508
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  SPTREMBL_23:*
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sp_bacteria:*
sp_fungi:*
sp_human:*
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sp_rodent:*
sp_virus:*
sp_vertebrate:*
sp_unclassified:*
sp_unclassified:*
sp_rvirus:*
sp_bacteriap:*
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sp_organelle:*
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 95
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046507
018783
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Q91XG8
Q28398
Q13208
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Q8WMR1
Q9PU78
P70521
                                                                                                                                                               Q8N696
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                                                                                              Q8n696 homo sapien Q15146 homo sapien Q15146 homo sapien O91wj5 mus musculu Q9r0w3 rattus norv O46507 papio hamad O18783 macropus eu Q8avb0 brachydanio
Q90zn6 brachydanio
Q91xg8 mus musculu
Q28398 erinaceus e
Q13208 homo sapien
Q91402 xenopus. he
Q8bs17 mus musculu
                                                              Q8wmr1 canis famil
Q9pu78 crocodylus
P70521 rattus norv
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	192.5	193.5	196.5	196.5	196.5	199.5	201	205.5	211.5	212	214	216	217	222.5	224	•	227.5	227.5	227.5	230	ω		ω		•	234.5	•	234.5	236 1
,	37.9	38.1	38.7	38.7	38.7	39.3	39.6	40.5	41.6	41.7	42.1	42.5	42.7	43.8	44.1	44.8	•	44.8	44.8	45.3	45.3	45.6	•	٠	46.2	46.2	46.2	46.2	46.5
	930	215	944	944	801	948	385	717	716	648	132	285	113	726	145	728	728	211	109	113	113	90	105	704	296	290	210	208	454
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	Q8av69 xenopus lae	042341 gallus gall		Bum	8 mus	ephyd	Q25101 herdmania m	P70006 xenopus lae	Q91691 xenopus lae	Omo	omod	homo	Q9uir6 homo sapien	Q90978 gallus gall		mus m	Q9bh09 felis silve	O55027 mus musculu	Q9n1b8 ovis aries	homo	homo	homo	homo	Q90865 gallus gall	homo	homo	Q13494 homo sapien	homo	O46506 papio hamad

## ALIGNMENTS

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RESULT 1
QBM65
ID 0200
ID 0200
DT 01-0
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                                                                                                                                                                                                                                                                                                                                                                             "Antiangiogenic domain of apolipoprotein(a).";
Submitted (JUN-2001) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: CONTAINS 1 KRINGLE DOMAIN.
REMBL, AX039748; AAK74187.1; --
REINTARY: CONTAINS 1 KRINGLE DOMAIN.
REMBL, AX039748; AK74187.1; --
REINTEPRO; IPR000001; Kringle.
RINTEPRO; IPR000001; Kringle.
RINTEPRO; IPR0003966; Prothrombin.
REPRINTS; PR001505; KRINGLE.
REPRINTS; PR01505; KRINGLE.
REPROSITE; PR000395; KRINGLE.
REPROSITE; PS00021; KRINGLE.
                                                                                                                                                       Query Match
Best Local Similarity
Matches 84; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-OCT-2002 (TrEMBLrel. 22, Created)
01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
Antiangiogenic AK38 protein.
                                                                                                                                                                                                                                                                                                                  Glycoprotein; Kringle.
SEQUENCE 95 AA; 10553 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q8N696;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE=Liver;
11
EQDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGD
                                          EQDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGD
                                                                                                                                                       98.6%;
llarity 98.8%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                       Score 501; DB 4; Length 95; Pred. No. 1.8e-50; Indels 1; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                           31EDC9DB38A372DF CRC64;
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61

INGPWCYTMNPRKLFDYCDIPLCAS

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RESULT 3
Q91WJ5
ID Q91WJ5;
AC Q91WJ5;
DT 01-DEC-2001 (
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PÉAM; PF00089; trypsin; 1.

PRINTS; PR00018; KRINGLE.

PRINTS; PR001018; KRINGLE.

PRINTS; PR01505; PROTHROMBIN.

PRODOM; PD000395; KRINGLE; 5.

SMART; SM00130; KR; 5.

SMART; SM000473; PAN AP; 1.

SMART; SM00020; Tryp_SPC; 1.

SMART; SM00020; Tryp_SPC; 1.

PROSITE; PS00021; KRINGLE 1; 5.

PROSITE; PS00013; TRYPSIN_DOM; 1.

PROSITE; PS00134; TRYPSIN_HIS; 1.

PROSITE; PS00134; TRYPSIN_BR; 1.

PROSITE; PS00135; TRYPSIN_SRR; 1.

PROSITE; PS00134; TRYPSIN_SRR; 1.

PROSITE; PS00135; TRYPSIN_SRR; 1.

PROSITE; PS00135; TRYPSIN_SRR; 1.

PROSITE; PS00134; TRYPSIN_SRR; 1.

PROSITE; PS00135; TRYPSIN_SRR; 1.
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Q15146;
01-NOV-1996
01-NOV-1996
01-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fibrinolysis 0:0-0(1991).
-!- SIMILARITY: CONTAINS 5 KRINGLE DOMAINS.
EMBL; M74220; AAA36451.1; -.
HSSP; P00747; 2PK4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Browne M.J., Chapman C.G., Dodd I., Mitchell D., Robinson J.H.; "Expression of recombinant human platera cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR003609; Pan_app.
InterPro; IPR003966; Prothrombin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPRO01314; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR003014; PAN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=9606;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                    478
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                                                                                                                                                                                                                                                                                                                                                                                                                             70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                    VGGPWCYTTNPRKLYDYCDVPQCAA 562
                                                                                                                                                                                                                                 INGPWCYTMNPRKLFDYCDIPLCAS 85
                                                                                                                                                                                                                                                                                                              INGPWCYTMNPRKLFDYCDIPLCAA
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810 AA;
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(TrEMBLrel. 01, Last sequence update)
(TrEMBLrel. 23, Last annotation update)
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     (TrEMBLrel. 19,
                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                          PRELIMINARY;
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Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        84.6%;
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le; 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MW;
                                                                                                                                                                                                                                                                                                                                                                                                                          Score 430; Db 4; -
Pred. No. 3.4e-41;
        Created)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                             PRT;
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                                                                                                                                                                            RESULT 4
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Best Local S
Matches 69
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PRINTS; PRO0018; KRINGLE.

PRINTS; PRO10018; KRINGLE I; S.

PROSITE; PRO100395; KRINGLE 1; S.

PROSITE; PS00021; KRINGLE 1; S.

PROSITE; PS00038; SCMATOTROPIN 2; 1.

PROSITE; PS00134; TRYPSIN DOM; 1.

PROSITE; PS00134; TRYPSIN HIS; 1.

PROSITE; PS00134; TRYPSIN HIS; 1.

PROSITE; PS00135; TRYPSIN HIS; 1.

PROSITE; PS00134; TRYPSIN HIS; 1.

PROSITE; PS00135; TRYPSIN HIS; 1.
                                                         01-MAY-2000 (TrEMBLre 01-MAY-2000 (TrEMBLre 01-MAR-2003 (TrEMBLre Plasminogen protein plasminogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
MCBI_TaxID=10090;
Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF00051; kringle; 5. 
Pfam; PF00024; PAN; 1. 
Pfam; PF00089; trypsin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -|- SIMILARITY: CONTAINS 5 KRII
EMBL; BC014773; AAH14773.1; --
EMBL; BF481053; AAM22156.1; --
HSSP; P00761; 1AN1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nagaraja R.;
"Genomic Sequence Analysis in the Mouse t-complex Region.";
"ihmitted (FEB-2002) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-DEC-2001 (TrEMBLrel. 01-MAR-2003 (TrEMBLrel.
                                           Rattus norvegicus (Rat).
                                                                                                                                   Q9ROW3;
                                                                                                                                                Q9R0W3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR003966; Prothrombin.
InterPro; IPR001254; Ser_protease_Try.
InterPro; IPR001400; Somatotropin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MGD; MGI:97620; Plg.
InterPro; IPRO00001; Kringle.
InterPro; IPR00001; Kringle.
InterPro; IPR003014; PAN.
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                                                                                                                                                                                                                                                                                                                                         69;
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                                                                                                                                                                                                                                          INGPWCYTMNPRKLFDYCDIPLCASS 86
                                                                                                                                                                                                                                                                                                EQDCMFGNGKGYRGKKATTVTGTFCQEWAAQEPHRHSTFIFGTNKWAGLEKNYCRNPDGD
                                                                                                                                                                                                                                                                               ETDCMYGNGKDYRGKTAVTAAGTPCQGWAAQEPHRHS1FTPQTNPRAGLEKNYCRNPDGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  J R.;
(OCT-2001) to the EMBL/GenBank/DDBJ databases
                                                                     (TrEMBLrel. 13, Created)
(TrEMBLrel. 13, Last sequence update)
(TrEMBLrel. 23, Last annotation update)
protein precursor (EC 3.4.21.7).
                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                  PRELIMINARY;
                  Chordata;
Rodentia;
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23,
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Last annotation update)
                                                                                                                                                                                                                                                                                                                                      Score 413; DB 11;
Pred. No. 3.1e-39;
4; Mismatches 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                Craniata; Vertebrata; Buteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                  PRT;
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CRC64;
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Best Local S
Matches 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00051; Kringle; 5.

Pfam; PF000024; PAN; 1.

Pfam; PF000089; trypsin; 1.

PRINTS; PR00122; CHYMOTRYPSIN.

PRINTS; PR00126; KRINGLE.

PRINTS; PR001505; PROTHROMBIN.

ProDom; PD000395; Kringle; 5.

SMART; SM00130; KR; 4.

SMART; SM00130; KR; 4.

SMART; SM000473; PAN_AP; 1.

SMART; SM00020; Tryp_SPC; 1.

PROSITE; PS00021; KRINGLE_1; 5.

PROSITE; PS00070; KRINGLE_2; 5.

PROSITE; PS00338; SOMATOTROPIN 2; 1.

PROSITE; PS00134; TRYPSIN_DOM; 1.

PROSITE; PS00134; TRYPSIN_DOM; 1.

PROSITE; PS00134; TRYPSIN_BOM; 1.

PROSITE; PS00134; TRYPSIN_BOM; 1.

PROSITE; PS00134; TRYPSIN_BOM; 1.

PROSITE; PS00134; TRYPSIN_TOM; 1.
                                                                                                                                                                                                                                                                                                046507;
01-JUN-1998
01-JUN-1998
01-MAR-2003
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"Rat plasmin
Submitted (M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CHAIN
SEQUENCE
                                                                                                 Papio hamadryas (Hamadryas baboon).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kanalas J.J., Makker S.P.;
"Identification of the rat Heymann nephritis receptor site for plasminogen.";
J. Biol. Chem. 266:10825-10829(1991).
I. SIMILARITY: CONTAINS 5 KRINGLE DOMAINS.
EMBL; AJ242649, CDAB46014.1; -.
HSSP; P00747; 1PMK.
Cercopithecinae; Papio. NCBI_TaxID=9557; [1]
                                                                                                                                                                                                                                                         01-JUN-1998 (TrEMBLrel.
01-JUN-1998 (TrEMBLrel.
01-MAR-2003 (TrEMBLrel.
Plasminogen (Fragment)
                                                                                                                                                                                                                              BABPEPSG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        046507
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InterPro; IPR000001; Kringle.
InterPro; IPR003014; PAN.
InterPro; IPR003609; Pan app.
InterPro; IPR003966; Prothrombin.
InterPro; IPR001254; Ser_protease_Try.
InterPro; IPR001400; Somatotropin.
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itted (MAY-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               68;
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812 /
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                90535 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A.H.,
                                                                                                                                                                                                                                                                                                    23,
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Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                  Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 408; DB 11;
Pred. No. 1.2e-38;
4; Mismatches 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PLASMINOGEN.
; 8C703C51410EBC9E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     s:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13;
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C TISSUBLIVE;

C TISSUBLIVE;

X MEDLINE=98004511; PubMed=9342350;

X Lawn R.M., Schwartz K., Patthy L.;

A Lawn R.M., Schwartz K., Patthy L.;

I awn R.M., Schwartz K., Patthy L.;

I proc. Natl. Acad. Sci. U.S.A. 94:11992-11997(1997).

C -- SIMILARITY: CONTAINS 5 KRINGLE DOMAINS.

DR HSSP, P00747; SHPG.

DR HSSP, P00747; SHPG.

DR InterPro; IPR001314; Chymotrypsin.

DR InterPro; IPR000001; Kringle.

DR InterPro; IPR000001; Kringle.

DR InterPro; IPR003014; PAN.

DR InterPro; IPR003014; PAN.

DR InterPro; IPR003609; Pan_app.

DR InterPro; IPR003609; Pan_app.
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DR InterPro; IPR0013046; Prothrombin.

DR InterPro; IPR001254; Ser_protease_Try.

DR InterPro; IPR001254; Ser_protease_Try.

DR InterPro; IPR001254; Ser_protease_Try.

DR Pfam; PF00051; kringle; 1.

DR Pfam; PF00015; kringle; 1.

DR PRINTS; PR001315; KRINGLE.

DR PRINTS; PR010105; KRINGLE.

DR PRINTS; PR0010395; KRINGLE.

DR PRINTS; SW00100; KR; 1.

DR PRONTS; SW00100; KR; 1.

DR PROSTTE; SW00100; KR; 1.

DR PROSTTE; PS00020; Tryp_SPC; 1.

DR PROSTTE; PS00070; KRINGLE 1; 1.

DR PROSTTE; PS00070; KRINGLE 2; 1.

DR PROSTTE; PS00134; TRYPSIN_DOM; 1.

DR PROSTTE; PS00134; TRYPSIN_TSER; 1.

DR PROSTTE; PS00134; TRYPSIN_TSER; 1.

DR PROSTTE; PS00135; TRYPSIN_TSER; 1.

DR PROSTTE; PS00134; TRYPSIN_TSER; 1.

DR PROSTTE; PS00135; TRYPSIN_TSER; 1.

DR PROSTTE; PS00134; TRYPSIN_TSER; 1.
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Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Glycoprotein; NON TER SEQUENCE 334
                                                                                                                                                                                                                                                                                                                                                                          018783
018783;
                                                                                                                                                                                                                                                                  Macropus eugenii (Tammar wallaby).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Metatheria; Diprotodontia; Macropodidae; Macropus.
                                                                                                                                                                                                                                                                                                                            01-JAN-1998 (TrEMBLrel.
01-JAN-1998 (TrEMBLrel.
01-MAR-2003 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (OCT-1997) to the EMBL/GenBank/DDBJ-!- SIMILARITY: CONTAINS 1 KRINGLE DOMAIN.
EMBL; AF029692; AAB97887.1; -.
HSSP; P00747; 5HFG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cox L.A., Jett C., Hixson J.E.; "Molecular Basis of the Apolipoprotein (a) Null Phenotype: A Splice "Site Nutation is Associated with Deletion of a Single Exon in a Null
                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                  NCBI_TaxID=9315;
                                                                                                                                                                                                                                                                                                            Plasminogen.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEROPS; S01.233;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GPWCYTTNPRKLYDYCDVPQCASS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DCMFGNGKRYRGKKATTVTGTPCQEWAAKEPHSHLIFTPETYPRAGLEKNYCRNPDGDVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DCMFGNGKGYRGKKATTVTGTFCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGDIN 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       334 AA; 36791 MW; C7DC06E03B965286 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
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23,
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, Last sequence up
, Last annotation :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 404; DB 6;
Pred. No. 1.3e-38;
                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      87
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nterPro; IPR001254;

Ser\_protease\_Try. le; 5.

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Q8WMR1
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                                                                              RESULT 8
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R PRINTS; PR00722; CHYMOTREPSIN.

R PRINTS; PR001018; KRINGLE:

R PRINTS; PR001018; KRINGLE:

R PRODOM; PD000395; Kringle; 5.

R PTODOM; PD000395; Kringle; 5.

R PTODOM; PD000395; Kringle; 5.

R SMART; SM00173; PAN AP; 1.

R SMART; SM00020; TryP_SPC; 1.

R SMART; SM00020; TryP_SPC; 1.

R PROSITE; PS00070; KRINGLE 2; 5.

R PROSITE; PS0070; KRINGLE 2; 5.

R PROSITE; PS00134; TRYPSIN_DOM; 1.

PROSITE; PS00134; TRYPSIN_BER; 1.

R PROSITE; PS00135; TRYPSIN_BER; 1.

R PROSITE; PS00135; TRYPSIN_SER; 1.
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Best Local S
Matches 47
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Best Local (
  Q8WMR1;
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01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
Plasminogen precursor (Pragment).
Brachydanio rerio (Zebrafish) (Danio rerio).
Eukaryota, Metazoa, Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
Cyprinidae; Danio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NON TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.

Hanumanthaiah R., Day K., Jagadeeswaran P.;

"Comprehensive analysis of blood coagulation pathways in teleostei:

"Comprehensive analysis of blood genes and identification of zebrafish
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Blood Cells Mol. Dis. 0:0-0(2002).
EMBL; AF515276; AAN71006.1; -.
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                                                                                                                                                                   159
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63;
                                                                                                                                                                                                                     61 INGPWCYTMNPRKLFDYCDIPLCAS 85
                                                                                                                                                                                                                                                                           99
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 EQDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTF1PGTNKWAGLEKNYCRNPDGD
                                                                                                                                                                                                                                                                                                                                                                                   l Similarity
47; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ESDCMYGSGKDYRGKRSTTVTGTLCQAWTAQEPHRHTIFTPDTYPRAGLEENYCRNPDGD
                                                                                                                                                                                                                                                                                                               EQDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGD
                                                                                                                                                                   VNGPWCYTTDPSKKWDYCQIPDCES
                                                                                                                                                                                                                                                                             EKDCKNGNGAEYRGSTSMTVMGVTCQAWRSMTPHQHASFTPETHPDKGLESNQCRNPDSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              429 AA; 47556 MW;
                                                                                                                                                                                                                                                                                                                                                                                   Conservative
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Pred. No. 2.7e-35;
7; Mismatches 15
                                                                                                                                                                                                                                                                                                                                                                                   Score 285; DB 1
Pred. No. 1e-24;
0; Mismatches
                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9A580A214A549C12 CRC64;
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                              359
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RESULT 9

ID Q9PU

AC Q9PU

DT 01-W

DT 01-W

DT 01-W

OC BUK

OC BUK

OC BUK

OC ATC

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Best Local
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Cania familiaris (Dog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Eukaryota; Metazoa; Chordata; Cranidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OppU78;
01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAY-2000 (TrEMBLrel. 23, Last annotation update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
Hepatocyte growth factor-like protein (Fragment).
Crocodylus niloticus (Nile crocodile) (African crocodile).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Crocodylidae; Crocodylinae; Crocodylus.
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01-MAR-2002 (TrEMBLrel.
01-MAR-2003 (TrEMBLrel.
                                                                                                                                                                                                     MEDLINE=20022983; PubMed=10555283;
Hughes S., Zelus D., Mouchiroud D.;
"Warm-blooded isochore structure in nile crocodile and turtle.";
Mol. Biol. Evol. 16:1521-1527(1999).
-!- SIMILARITY: CONTAINS 1 KRINGLE DOMAIN.
EMBL; AJOL1396; CAB56422.1; -.
HSSP; P00747; IHPJ.
HSSP; 900747; IHPJ.
HSSP; S01.977; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRINTS; PRO0018; KRĪNGLE.
PRINTS; PRO1505; PROTHROMBIN.
ProDom; PD000195; Kringle; 4.
SMART; SM00130; KR; 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -!- SIMILARITY: CONTAINS 4 KRINGLEMBL, AY069985; AAL58519.1; -.
InterPro; IPR000001; Kringle.
InterPro; IPR003966; Prothrombin.
Pfam; PF00051; kringle; 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
Pirie-Shepherd S.R., Coffman
Folkman J., Waters D.J.;
                                           Pfam;
Pfam;
                                                                                                         InterPro; IPR000001; Kringle
InterPro; IPR003966; Prothro
InterPro; IPR001254; Ser_pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          95078
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROSITE; PS00021; KRINGLE_1; PROSITE; PS50070; KRINGLE_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (DEC-2001) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cancer."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Plasminogen (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=8501;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Angiostatin is Detectable in the
       PF00051; kringle; ;
PF00089; trypsin; !
S; PR00018; KRINGLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3 DCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGDIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GPWCYTMNPRKLFDYCDIPLC 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GPWCYTTNPDVRFDYCNIPEC
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359 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    49.3%;
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                                                                        Ser_protease_Try.
le; 2.
                                                                                                                                                 Prothrombin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20,
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Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 250.5;
Pred. No. 8.4
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Mismatches 2
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Canis.
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           DR InterPro; IPR003114; Chymotrypsin.

InterPro; IPR003014; PAN.

DR InterPro; IPR003014; PAN.

DR InterPro; IPR00306; PAN.

DR InterPro; IPR003966; ProThrombin.

InterPro; IPR001254; Ser_Drotease_Try.

Pfan; PF00051; kringle; 4.

DR Pfan; PF00051; kringle; 4.

DR Pfan; PF00089; trypsin; 1.

DR Pfan; PF00089; trypsin; 1.

DR PRINTS; PR00122; CHYMOTRYPSIN.

DR PRINTS; PR00130; KR; 4.

DR PRINTS; PR00130; KR; 4.

DR PRINTS; PR00130; KR; 4.

DR PRINTS; SM00130; KR; 4.

DR SMART; SM00130; KR; 4.

DR SMART; SM00130; KR; 4.

DR SMART; SM00120; Tryp SPC; 1.

DR SMART; SM00020; Tryp SPC; 1.

DR PROSITE; PS00021; KRINGLE 2; 4.

DR PROSITE 2 PS00221; KRINGLE 2; 4.

DR PROSITE 3 PS00221; KRINGLE 2; 4.

DR PROSITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ProDom, PD000352,
SMART; SM00130; KR; 1.
SMART; SM00020; Tryp_SPc; 1.
PROSITE; PS00021; KRINGLE_1; 1.
R PROSITE; PS50070; KRINGLE_2; 1.
R PROSITE; PS50240; TRYPSIN_DOM; 1.
Clumonrotein; Hydrolase; Kringle; Pr
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Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ohshiro K., Iwama A., Macbune ..., Takasu N., Suda T.;
Takasu N., Suda T.;
"Molecular cloning of Rat Macrophage-stimulating I involvement in the Male Reproductive System.";
involvement in the Male Reproductive System.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Glycoprotein; I
NON_TER 31:
NON_TER 31:
SEQUENCE 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P70521;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Biochem. Biophys. Res. Commun. 227:
-- SIMILARITY: CONTAINS 4 KRINGLE
EMBL; X95096; CAA64473.1; --
HSSP; P00747; 1KRN.
MEROPS; S01.975; --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-FEB-1997 (TrEMBLrel. 02,
01-FEB-1997 (TrEMBLrel. 02,
01-MAR-2003 (TrEMBLrel. 23,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=97011126; PubMed=8858136; Ohshiro K., Iwama A., Matsuno K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
Macrophage stimulating protein precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rattus norvegicus (Rat).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          / Match 48.5%;
Local Similarity 53.0%;
hes 44; Conservative 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EDCYHGNGELYRGHTSKTRKGVTCQKWSEQSPH-VPQISPTTHPAAHLDENYCRNPDNDS
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313 AA; 34793 MW;
716 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chordata;
Rodentia;
80733 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10;
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Pred. No. 2.1e
10; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
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06B7DF3EF56D921F CRC64;
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les 28;
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                                                                                                            Query Match
Best Local S
Matches 41
                                                                                                                                                                 InterPro; IPR003609; Pan app.

InterPro; IPR001254; Ser_protease_Try.

R InterPro; IPR001254; Ser_protease_Try.

R Pfam; pF00021; kringle; 4.

R Pfam; pF00029; trypsin; 1.

R Pfam; pF00089; trypsin; 1.

R PRINTS; PR000130; Kringle; 4.

R Probom; pD000395; Kringle; 4.

R SMART; SM00130; KR; 4.

SMART; SM00130; Tryp SPc; 1.

R SMART; SM00020; Tryp SPc; 1.

R PROSITE; PS00021; KRINGLE 1; 4.

R PROSITE; PS00021; KRINGLE 2; 4.

R PROSITE; PS00070; KRINGLE 3; 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q90ZN6 PKBLL....
Q90ZN6;
Q90ZN6;
Q90ZN6;
01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
01-MAR-2003 (TrEMBLrel. 24, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Brachydanio rerio (Zebrafish) (Danio rerio).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
Cyprinidae; Danio.
NCBI_TaxID=7955;
                                                                                                                                                                                                                                                                                                                                                                                                    ZFIN; ZDB-GENE-020806-3; mstl.
InterPro; IPR00001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR003014; PAN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bassett D.I., Wilson S.W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        436
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                            64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62
                                                                                                              41;
                                                                                  4
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                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                     CIVGKGEDYRGKVSTTTSGRTCQQWWSKFPHDHRWTPSATN---
                      PWCYTMNPRKLFDYCDIPLC
                                                                            CMFGNGKGYRGKKATTVTGTFCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HGPWCYTLDPETLFDYCALKRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NGPWCYTMNPRKLFDYCDIPLC 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EGCYHGSGEQYRGSVSKTRKGVQCQHWSSETPHK-PQFTPTSAPHAGLEANFCRNPDGDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGDI
 PWCYTTDPERRYESCNIPQC
                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                            47.3%; Score 240.5; DB 13 51.2%; Pred. No. 2.6e-19; tive 12; Mismatches 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       47.9%; Score 243.5; DB 1
48.8%; Pred. No. 1.2e-19;
tive 14; Mismatches 27
                            83
 187
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                                                                                                                                          DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Factor-Like
                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 716;
                                                        GLELNYCRNPDGDRIG
                                                                                                                                          709;
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                                                                                                              Gaps
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                                                        167
                                                                                   63
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RESULT

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OC CREE E CO CREE E CREE E CO CREE E CR
RESULT 13
Q28398
ID Q2839
AC Q
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Best Local S
Matches 40
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R Pfam; PF00089; trypsin; 1.

R PRINTS; PR00722; CHYMOTRYPSIN.

R PRINTS; PR00130; KRINGLE.

R PRINTS; PR01505; PROTHROMBIN.

R PRODOM; PD000395; Kringle; 4.

R SMART; SM00130; KR; 4.

R SMART; SM00473; PAN AP; 1.

R SMART; SM000473; PAN AP; 1.

R SMART; SM00020; Tryp_SPc; 1.

R PROSITE; PS00021; KRINGLE 1; 4.

R PROSITE; PS50070; KRINGLE 2; 4.

R PROSITE; PS50240; TRYPSIN_DOM; 1.

R PROSITE; PS50240; TRYPSIN_DOM; 1.

R PROSITE; PS50240; TRYPSIN_DOM; 1.

R Glycoprotein; Hydrolase; Kringle; Protease; Serine protease.

Glycoprotein; Hydrolase; Kringle; Protease; CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            O91XGB
PREJAME

O91XGB;

O91XGB;

O1-DEC-2001 (TrEMBLrel. 19, Created)

O1-DEC-2001 (TrEMBLrel. 19, Last sequence update)

O1-MAR-2003 (TrEMBLrel. 23, Last annotation update)

O1-MAR-2003 (TrEMBLrel. 24, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q28398
Q28398;
Q1-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases -!- SIMILARITY: CONTAINS 4 KRINGLE DOMAINS.
EMBL; BC010551; AAH10551.1; -.
HSSP; P00761; 1AN1.
MGD; MGI:96080; Hgfl.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=10090;
    SEQUENCE FROM N.A.
TISSUELiver;
MEDLINE=96025778; PubMed=7592597;
Lawn R.M., Boonmark N.W., Schwartz K.,
                                                                                                                                                                                                                                                       Apolipoprotein(a) (Fragment).
Erinaceus europaeus (Western European hedgehog).
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Insectivora; Erinaceidae; Erinaceinae; Erinaceus.
                                                                                                                                                                                                                                                                                                                                                                                                                     01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR003609; Pan app.
InterPro; IPR003966; ProChrombin.
InterPro; IPR001254; Ser protease_Try.
Pfam; PF00051; kringle; 4.
                                                                                                                                                                                                            NCBI_TaxID=9365;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR001314; Chymotrypsin.
InterPro; IPR000001; Kringle.
InterPro; IPR003014; PAN.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                40;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 QDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          48.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            47.1%; Score 239.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; Pred. No. 3.46
14; Mismatches
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Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2869
            Lindahl G.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.4e-19;
1es 27;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
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            Wade D.P.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          435
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                                                                                                                              R InterPro; IPR000001; Kringle.
R InterPro; IPR001254; Ser_protease_Try.
R InterPro; IPR001254; Ser_protease_Try.
R Pfam; pP00051; kringle; 4.
R Pfam; pP00024; PAN; 1.
R Pfam; pP000039; trypsin; 1.
R ProDom; pD000395; Kringle; 4.
R ProDom; SM00130; KR; 4.
R SMART; SM000130; KR; 4.
R SMART; SM00020; Tryp_SPc; 1.
R SMART; SM00020; Tryp_SPc; 1.
R PROSITE; PS00021; KRINGLE 1; 3.
R PROSITE; PS00021; KRINGLE 2; 4.
R PROSITE; PS50070; KRINGLE 3; 3.
R PROSITE; PS50070; KRINGLE 3; 3.
R PROSITE; PS50070; KRINGLE 3; 4.
R PROSITE; PS50070; TYPPSIN DOM; 1.
R PROSITE; PS50070; KRINGLE 3; 4.
R PROSITE; PS50070; TYPPSIN DOM; 1.
R PROSITE 3; 4.
R PROSITE 4.
R PROSITE 5 PS50070; TYPPSIN DOM; 1.
R PROSITE 5 PS50070; TYPPSIN DOM; 1.
R PROSITE 5 PS50070; TY
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Best Local S
Matches 43
Query Match
Best Local Similarity
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Q13208;
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Pfam; PF00051; Kringle; 31.
PRINTS; PR00018; KRINGLE.
ProDom; PD000395; Kringle; 31.
SMART; SM00130; KR; 31.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE=20191171; PubMed=10728827;
Degen S.J.F., McDowell S.A., Waltz S.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01.NOV-1996 (TrEMBLrel. 01, Created)
01.NOV-1996 (TrEMBLrel. 01, Last sequence update)
01.NAR-2003 (TrEMBLrel. 23, Last annotation updat
Hepatocyte growth factor-like protein homolog.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROSITE; PS00021; KRINGLE_1; 30.
PROSITE; PS50070; KRINGLE_2; 31.
Glycoprotein; Kringle; Lipoprotein.
NON_TER 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       hedgehog apolipoprotein(a).";
J. Biol. Chem. 270:24004-24009(1995).
-|- SIMILARITY: CONTAINS 31 KRINGLE D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Byrne C.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEROPS; S01.977;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; U28054; AAC63092.1; HSSP; P00747; 2PK4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA Seq. 8:409-413(1998).
-!- SIMILARITY: CONTAINS 4 KRINGLE DOMAINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3yrne C.D., Fong K.J., Meer K., Patthy L.;
'The recurring evolution of lipoprotein(a). Insights from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          identity to the chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Structure of the human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .ike protein.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2648 -APWCYTTNSAVRWEYCSIPTCESS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
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46.8%;
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Pred. No. 1.8e-18;
     Score
Pred.
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     237.5; DB 4;
No. 4.5e-19;
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Matches 39
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R InterPro; IPR003609; Pan app.

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R InterPro; IPR001254; Ser_protease_Try.

R Pfam; PP00051; kringle; 1.

R Pfam; PP00089; trypsin; 1.

R Pfam; PP00018; KRINGLE

R PROSTT; PR00019; Kringle; 4.

R SMART; SM00019; KR; 4.

R SMART; SM00019; KR; 4.

R SMART; SM00010; Tryp_SPC; 1.

R PROSITE; PS00021; KRINGLE 1; 4.

R PROSITE; PS00021; KRINGLE 2; 4.

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Q91402;
Q91402;
01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=95267690; PubMed=7748783;
Nakamura H., Tashiro K., Nakamura T., Shiokawa K.;
Nakamura Cloning of Xenopus HGF cDNA and its expression studies in Xenopus early embryogenesis ";
Xenopus early embryogenesis ";
Mech. Dev. 49:123-131(1995).
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Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
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InterPro; IPR000001; Kringle.
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                                                             ||||:|:| | |||||:
172 GGPWCFTKSPEVRHDVCDIPFCS 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       343 QDCYHGAGEQYRGTVSKTRKGVQCQRWSAETPHK-PQFTFTSEPHAQLEENFCQNPDGDS 401
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                                                                                                                           113 RDCIHGKGSNYRGTRNVTKRGLACQPWNSMIPHEHS-FLPSTYRGKDLKENYCRNPKGEE 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62 NGPWCYTMNPRKLFDYCDIPLCA 84
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                                                                                                                                                                                           Conservative
                                                                                                                                                                                        46.8%; Score 237.5; DB 13; Length 710;
47.0%; Pred. No. 5.8e-19;
tive 12; Mismatches 31; Indels 1;
             2004, 17:25:37
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and Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, 18 derived by analysis of the total score distribution.

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430	430	432	432	508	508	508	Score
84.6	84.6 6	85.0	85.0	100.0	100.0	100.0	Query Match
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Human plasminogen Human plasminogen Human plasminogen	ABB83470 ABB81496 ABB83795	223	810 810	444	430	V
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Sequence encoded b Human plasminogen	AAR34428 AAY08685	14 20	810 810	444	430	
Human Human Blacm	ABG76087 AAR08065	111	791 810		0000	
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	AAB01887 AAY99589	21	791 791	. 4.4.	430	
A multifunctional Human 'Glu' plasm Mammalian kringle	AAY02100 AAR60519 AAB36562	20 22 23	566 790	444	430	
	ABB09586 AAW51457 AAG79749	23 24	362 437 484	84.6 84.6	430 430	
	ABB81498 AAY25408	23	348 357	4.4.	430	
Novel human secret Novel human secret A human angiogenes	AAU32129 AAU32136	222	266 266	444	430	
Human Novel	AAB01919 AAU32126	21 22	192 266	4.4	430 430	
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Human Human Himan	AAB01913 AAB01916 AAW34286	21 21 18	95 98 101	444	430 430	

## ALIGNMENTS

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AAY72947;
                                            13-JUN-2001
                                                   AAY72947 standard; Protein;
                                            (first entry)
                                                   86
                                                   8
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Human apolipoprotein(a) kringle domain V38, LK8 protein.

Human; angiogenesis inhibitor; LK8; apolipoprotein(a) kringle domain; angiogenesis-mediated disease; cancer; rheumatoid arthritis; therapy; cytostatic; antirheumatic; antiarthritic; antipsoriatic; psoriasis; ocular angiogenic disease; endothelial cell proliferation; tumour; cell migration.

Ното варіелв.

WO200119868-A1

22-MAR-2001.

15-SEP-1999; 99WO-KR00554.

15-SEP-1999; 99WO-KR00554

(MOGA-) MOGAM BIOTECHNOLOGY RES INST.

Chang J, Kim JS, Park EJ, Yum J, Chung S

WPI; 2001-244787/25. N-PSDB; AAD03258.

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RESULT 2
AAY42303
ID AAY4
XX AAY AAYA
DT 06-1
XX ADO
KW ADO
KW ADO
KW ADO
XX AO
PN WO
XX WO
YX 20
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XX 2
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   This sequence represents the kringle 5 domain of human apolipoprotein (apo(a)), which was used to generate monoclonal antibodies. Apo(a) is characteristic glycoprotein component of lipoprotein(a) (Lp(a)), which
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel angiogenesis inhibitor, LK68 for treating angiogenesis-mediated diseases, e.g. cancer and rheumatoid arthritis, has human apolipoprotein(a) kringle domains IV36, IV37 and V38 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Apolipoprotein A; apo(a); glycoprotein; heart disease; detection; diagnosis.
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                                                                                                                         Disclosure;
                                                                                                                                                                                                           New methods for measuring concentrations
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                                                                                                                                                                                                                                                                                                                                                                                        (ABBO ) ABBOTT LAB.
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                                                                                                                                                                                                                                                                                                                           Ziemann R;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              86 AA;
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                                                                                                                         68;
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                                                                                                                         71pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91
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                                                                                                                                                                                                              of lipoprotein(a) in a plasma
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Matches 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ip(a) and LDL are both associated with premature coronary heart disease. Increased Lp(a) concentrations may inhibit fibrinolysis by reducing the generation of plasmin. This may be effected by competition for plasminogen cell-surface receptors, by inhibition of activation of plasminogen, or by competition for binding sites on fibrin. Anti-apo(a) antibodies can be used in a novel method of Lp(a) quantitation. Such antibodies are not cross-reactive with plasminogen, LDL, and the various types of apo(a) kringle 4 domains. Previous methods of Lp(a) immunoassay used antibodies that bind to the apo(a) kringle 4 domain, which is present in multiple copies. One method, TERUMO BLISA (enzyme-linked immunosorbent assay), tended to produce erroneous results with cardiac and diabetic patients, especially those with very high Lp(a) concentrations (greater than 50 mg/dL). Apo(a) monoclonal antibodies may be a accurate markers for the detection and diagnosis of heart
                                                                                                                                                                                                                                                                                                                                                                               Human; angiogenesis inhibitor; LK68; apolipoprotein(a) kringle domain angiogenesis-mediated disease; cancer; rheumatoid arthritis; therapy; cytostatic; antirheumatic; antiarthritic; antipsoriatic; psoriasis; ocular angiogenic disease; endothelial cell proliferation; tumour;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human angiogenesis inhibitor, LK68 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY72944;
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                           15-SEP-1999;
                                                       15-SEP-1999;
                                                                                                                                                                                    Domain
                                                                                                                                                                                                                                          Domain
                                                                                                                                                                                                                                                                                                Domain
                                                                                                                                                                                                                                                                                                                                       Homo sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY72944 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    is not found in the otherwise identical low density lipoprotein (LDL).
                                                                                                              WO200119868-A1.
  (MOGA-) MOGAM BIOTECHNOLOGY RES
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                             99WO-KR00554
                                                        99WO-KR00554.
                                                                                                                                        /label= KV38
/note= "Apolipoprotein(a) kringle domain V38,
protein"
                                                                                                                                                                                              protein"
                                                                                                                                                                                                                                                      protein"
                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                             /label= KIV37
/note= "Apolipoprotein(a)
                                                                                                                                                                                                                                                                   /note= "Apolipoprotein(a) kringle
                                                                                                                                                                                                                                                                                'label= KIV36
                                                                                                                                                                                                                                            19..207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Protein;
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Pred. No. 1.1e-
; Mismatches
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0;
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                                                                                                                                                                                                                                                                       IV36,
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RESULT 4
AAR22504
ID AAR2
XX AAR2
XX O9-J
DT 25-A
XX Plas
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XX Plas
XX Plas
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LK68 protein contains the amino acid sequences of human applipoprotein(a) kringle domains IV36 (LK6 protein), IV37 (LK7 protein) and V38 (LK8 protein). LK68, LK6, LK7 and LK8 are inhibitors are of endothelial cell proliferation, cell migration and normal development of capillaries in the chick embryo chorioallantoic membrane (CAM). LK68 protein, its single kringles or their functional equivalents, are useful for treating angiogenesis-mediated diseases, such as cancer, rheumatoid arthritis, psoriasis or ocular angiogenic disease in animals or humans.

LK68 is useful as an anticancer agent and also for inhibiting primary
  01-SEP-1990;
                                                     29-AUG-1991;
                                                                                                                                                                WO9204450-A
                                                                                                                                                                                                                                             Cleavage-site
                                                                                                                                                                                                                                                                                                                                                        Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Plasminogen; urokinase-like plasminogen activator; hybrid; fibrinolysis; blood clotting; acute myocardial infarction.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09-JAN-2003
25-AUG-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR22504;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR22504 standard; Protein; 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel angiogenesis inhibitor, LK68 for treating angiogenesis-mediated diseases, e.g. cancer and rheumatoid arthritis, has human apolipoprotein(a) kringle domains IV36, IV37 and V38 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                              Region
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            [GARSYQ] - [Plasminogen 443-541] - [u-PA 137-411] hybrid.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001-244787/25.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EQDCMFGNGKGYRGXKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGD
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Conservative
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                                                        91WO-GB01455
                                                                                                                                                                                                                                             126..127
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                                                                                                                                                                                                                                                                                                                                                                                 /note= "amino acids -3 to +3 of t-PA"
                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
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                                                                                                                                                                                                                                                                         "amino acids 137-411 of u-PA"
                                                                                                                                                                                                                   "u-PA cleavage site"
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Pred. No. 3.5e-42;
; Mismatches 0;
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RESULT 5
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Best Local (
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       09-JAN-2003
25-AUG-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAR22503;
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                                                                                                                                                                           19-MAR-1992
                                                                                                                                                                                                                                                                                                                                                                                                 Region
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   [GARSYQ]-[Plasminogen 347-541]-[u-PA 137-411]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (BEEC ) BEECHAM GROUP PLC.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VGGPWCYTTNPRKLYDYCDVPQCPSS 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EEDCMFGNGKGYRGKRATTVTGTPCQDWAAQEPHRHSIFTPETNPRAGLEKNYCRNPDGD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    urokinase-like plasminogen activator; hybrid;
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                                                                                                                          91WO-GB01455
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                                                                                                                                                                                                                                                                                                                                                                            'note= "amino acids 347-541 of plasminogen"
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                                                                                                                                                                                                                                                                                                                           "amino acids 137-411 of u-PA"
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Pred. No. 1.3e-34;
6; Mismatches 9
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(BEEC ) BEECHAM GROUP PLC

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RESULT 6
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(Updated on 09-UAN-2003 to add missing OS field.)
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                                                                               Producing angiostatin for treating angiogenic diseases involves contacting plasminogen with plasminogen activator and sulfhydry simultaneously, or producing plasmin which is contacted with su
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Angiostatin; plasminogen; sulfydryl donor; angiogenesis; tumour; angiogenic disease; neoplastic disease; connective tissue disorder; rheumatoid arthrittis; atherosclerosis; ocular angiogenic disease; diabetic retinopathy; corneal graft rejection; cardiovascular disease; cerebral vascular disease; diabetes; immune disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 10; Page 50; 64pp; English.
                                                                                                                                                                                                                                                                  Soff G,
                                                                                                                                                                                                                                                                                                                                                                                   08-FEB-2000; 2000US-0500397.
                                                                                                                                                                                                                                                                                                                                                                                                                                             08-FEB-2001; 2001WO-US04021.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16-AUG-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Macaca mulatta.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Amino acid sequence of monkey plasminogen.
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                                                                                                                                                                                                                                                                  Gately ST,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       476 AA;
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Pred. No. 1.7e-34;
6; Mismatches 9;
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                                                                                        ator and sulfhydryl donor contacted with sulfhydryl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 476;
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Disclosure;

Page

90-93; 101pp; English

preparation of Kringle five peptide fragment for treating various disorders such as anglogenic, ocular, skin diseases and cancer, involves mixing mammalian plasminogen and elastase followed by incubation and isolation -

The invention relates to a method of preparing plasminogen kringle peptide fragments. The method comprises mixing mammalian plasminogs elastase in the ratio 1:100-1:300, followed by incubating and isola

plasminogen and

Example 17; Page -; 48pp; English

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ARBSULT 7
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AABO1916
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The specification describes a method for generating angiostatin in vitro. The method comprises contacting plasminogen with a sulfydryl donor, or culturing cells capable of producing plasminogen activator in conditioned culture medium (CCM) and contacting the CCM with plasminogen. Angiostatin produced by method of the invention is useful for treating animals with angiogenesis diseases. It is useful for treating an angiogenic disease such as neoplastic diseases (e.g. tumour and tumour metastasis), benign tumours (e.g. hemangiomas, acoustic neuromas, etc), connective tissue disorders (e.g. rheumatoid arthritis and atherosclerosis), ocular angiogenic diseases (e.g. diabetic retinopathy, corneal graft rejection, etc), cardiovascular diseases, cerebral vascular diseases, diabetes—associated diseases and immune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Plasminogen; human; kringle domain; endothelial cell proliferation; angiogenesis; antiproliferative; antiarteriosclerotic; cytostatic; antipsoriatic; antiinflammatory; antiulcer; antirheumatic; antiarthritic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         disorders (e.g. chronic inflammation and autoimmunity). The present sequence represents a plasminogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human plasminogen kringle 5 (Val454-Ala543).
                                                                                                                                                                                                                                                                                                                                 WPI; 2000-349573/30.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            03-MAY-1996;
03-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        02-MAY-2000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    antiangiogenic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18-SEP-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB01914;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                  (ABBO ) ABBOTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sapiens.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           72;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INGPWCYTMNPRKLFDYCDIPLCASS 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EQDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EEDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHSHRIFTPETNPRAGLEKNYCRNPDGD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        LAB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            96US-0643219.
97US-0832087.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97US-0851350.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cancer; tumour; autoimmune disease.
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83.7%;
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Pred. No. 2.8e-34;
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RESULT 8
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XX AAY5
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CC Sequences AAB01906-B01919 represent fragments of human plasminogen used in an exemplification of the invention.

CC Note: This sequence is not shown in the specification, but is derived come the full length human plasminogen sequence (AAB01887) shown in
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                                                                                                                                                                                                              New soluble derivative of anti-angiogenic polypeptide useful for treatment of primary or secondary cancers, contains covalently a membrane-binding elements for targeting .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27-JAN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 plasminogen; human.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16-JUL-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Anti-angiogenic; angiogenesis inhibitor; cancer; tumour; therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (ADPR-) ADPROTECH PLC.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VGGPWCYTTNPRKLYDYCDVPQCAA
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                                                                                                                                                                                                                                                                                                                                                                                                                                    Bright JR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
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                                                                                                                                           21; 36pp;
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                                                                                                                                           English.
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Pred. No. 5.
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The present sequence is that of human plasminogen mature polypeptide. The invention relates to new soluble derivatives of anti-angiogenic polypeptides. (I) comprise 2 or more

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RESULT 9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 low membrane affinity that are covalently attached to a soluble anti-angiogenic polypeptide such as a non-catalytic region of human plasminogen. The MBEs interact independently with thermodynamic additivity, with components of the vascular endothelium. (I) provide targeted delivery of the anti-angiogenic polypeptide to cell membranes and sites of active angiogenesis, particularly the vascular endothelium, and therefore increase the local concentration and reduce the risk of adverse effects on normal processes elsewhere in the vasculature. They are used in a claimed method of treatment of primary or secondary tumour.
The invention relates to a method of preparing plasminogen kringle 5 peptide fragments. The method comprises mixing mammalian plasminogen and elastase in the ratio 1:100-1:300, followed by incubating and isolating the fragment. The kringle 5 peptides are inhibitors of angiogenesis and endothelial cell proliferation and migration. The peptides are useful for treating angiogenic diseases, primary and metastatic solid tumours and carcinomas of various organs such as breast, genital tract,
                                                                                                                                                     Preparation of Kringle five peptide fragment for treating vario disorders such as anglogenic, ocular, skin diseases and cancer, involves mixing mammalian plasminogen and elastase followed by incubation and isolation -
                                                                                                                                                                                                                                                                 Davidson DJ
                                                                                                                            Example
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                                                                                                                                                                                                                                                                                                                                 03-MAY-1996;
03-APR-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        antiangiogenic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          angiogenesis; antiproliferative; antiarteriosclerotic; cytostatic;
antipsoriatic; antiinflammatory; antiulcer; antirheumatic; antiarthritic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Plasminogen; human; kringle domain; endothelial cell proliferation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human plasminogen
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                                                                                                                                                                                                                                                                                                   (ABBO ) ABBOTT
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                                                                                                                                                                                                                                      2000-349573/30.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            70;
                                                                                                                            17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VGGPWCYTTNPRKLYDYCDVPQCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EQDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCKNPDGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INGPWCYTMNPRKLFDYCDIPLCAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EEDCMFGNGKGYRGKRATTVTGTPCQDWAAQEPHRHSIFTPETNPRAGLEKNYCRNPDGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        91 AA;
                                                                                                                         Page -; 48pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                  96US-0643219.
97US-0832087.
                                                                                                                                                                                                                                                                                                                                                                                97US-0851350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cancer; tumour;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      kringle 5 (Val454-Phe546).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          84.6%;
82.4%;
                                                                                                                         English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 430; DB 21
Pred. No. 5.1e-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 see AAY58855-61) with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
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                                                                                                                                                                                                       various
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RESULT 10
AAB01913
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         endocrine glands, skin, tumours of the brain and eyes and solid tumours arising from haematopoietic malignancies such as leukaemias and lymphomas. They are also used for the prophylaxis of various autoimmune diseases (e.g., rheumatoid arthritis), ocular diseases, skin diseases (e.g., psoriasis), blood vessel diseases (e.g. haemangiomas, Osler-Webber syndrome), diseases caused by excessive or abnormal stimulation of endothelial cells (e.g., Crohn's disease, atherosclerosis), diseases which have angiogenesis as a pathologic consequence (e.g., cat scratch disease and ulcras). The peptides are also useful as a birth control agent which inhibits ovulation and establishment of the placenta. Sequences AAB01906-B01919 represent fragments of human plasminogen used in an exemplification of the invention.

Note: This sequence is not shown in the specification, but is derived from the full length human plasminogen sequence (AAB01887) shown in
                                                                                         Preparation of Kringle five peptide fragment for treating various disorders such as angiogenic, ocular, skin diseases and cancer, involves mixing mammalian plasminogen and elastase followed by incubation and isolation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Plasminogen; human; kringle domain; endothelial cell proliferation; angiogenesis; antiproliferative; antiarteriosclerotic; cytostatic; antipsoriatic; antiinflammatory; antiulcer; antirheumatic; antiarthritic;
                                                                                                                                                                                                     Davidson
                                                                                                                                                                                                                                                                 03-MAY-1996;
03-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAB01913 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                            Example 17; Page -; 48pp; English
                                                                                                                                                                      WPI; 2000-349573/30
                                                                                                                                                                                                                                                                                                                05-MAY-1997;
                                                                                                                                                                                                                                                                                                                                               02-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                            US6057122-A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAB01913
                                                                                                                                                                                                                                    (ABBO ) ABBOTT
                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tigure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     plasminogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 INGPWCYTMNPRKLFDYCDIPLCAS 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 EQDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     70;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VGGPWCYTTNPRKLYDYCDVPQCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EEDCMFGNGKGYRGKRATTVTGTPCQDWAAQEPHRHS1FTPETNPRAGLEKNYCRNPDGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   93
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                                                                                                                                                                                                                                                                 96US-0643219.
97US-0832087.
                                                                                                                                                                                                                                                                                                                97US-0851350
                                                                                                                                                                                                                                                                                                                                                                                                                                          cancer; tumour; autoimmune disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     kringle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  84.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5 (Val449-Ala543).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 430; DB 21;
Pred. No. 5.3e-35;
7; Mismatches 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
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The invention relates to a method of preparing plasminogen kringle 5 peptide fragments. The method comprises mixing mammalian plasminogen and elastase in the ratio 1:100-1:300, followed by incubating and isolating

Example 17; Page -; 48pp; English

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RESULT 11
ARBO1916
ID ARBO1
XX ARBO1
XX ARBO1
XX 18-SE
XX Plasm
KW angic
KW antip
XX Plasm
KW antip
XX O2-MA
PR 03-MA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CC the fragment. The kringle 5 peptides are inhibitors of angiogenesis and CC endothelial cell proliferation and migration. The peptides are useful CC for treating angiogenic diseases, primary and metastatic solid tumours CC and carcinomas of various organs such as breast, genital tract, CC endocrine glands, skin, tumours of the brain and eyes and solid tumours CC arising from haematopoietic malignancies such as leukaemias and CC lymphomas. They are also used for the prophylaxis of various autoimmune CC diseases (e.g., rheumatoid arthritis), ocular diseases, skin diseases CC (e.g., psoriasis), blood vessel diseases (e.g. haemangiomas, Osler-Webber CC (g., psoriasis), blood vessel diseases (e.g. haemangiomas, Osler-Webber CC (g., psoriasis), blood vessel disease, atherosclerosis), diseases CC (e.g., psoriasis), as a pathologic consequence (e.g., cat scratch CC (sieases and ulcers). The peptides are also useful as a birth control CC agent which inhibits ovulation and establishment of the placenta. CC sequences AAB01906-B0191 represent fragments of human plasminogen used in an exemplification of the invention.

CC from the full length human plasminogen sequence (AAB01887) shown in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       plasminogen; human; kringle domain; endothelial cell proliferation;
angiogenesis; antiproliferative; antiarterioscolerotic; cytostatic;
antipBoriatic; antinflammatory; antiulcer; antirheumatic; antiarthritic;
antiangiogenic; cancer; tumour; autoimmune disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human plasminogen kringle 5 (Val449-Phe546).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                         Preparation of Kringle five peptide fragment for treating various disorders such as anglogenic, ocular, skin diseases and cancer, involves mixing mammalian plasminogen and elastase followed by incubation and isolation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAB01916 standard;
                                                                                                                                                                                                                                                                   Davidson DJ
                                                                                                                                                                                                                                                                                                                                                                                   03-MAY-1996;
03-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        05-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 02-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US6057122-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18-SEP-2000
                                                                                                                                                                                                                                                                                                                          (ABBO ) ABBOTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sapiens
                                                                                                                                                                                                          2000-349573/30.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VGGPWCYTTNPRKLYDYCDVPQCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INGPWCYTMNPRKLFDYCDIPLCAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EEDCMFGNGKGYRGKRATTVTGTPCQDWAAQEPHRHSIFTPETNPRAGLEKNYCRNPDGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EQDCMFGNGKGYRGKKATTVTGTFCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
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                                                                                                                                                                                                                                                                                                                             LAB.
                                                                                                                                                                                                                                                                                                                                                                                   96US-0643219.
97US-0832087.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 430; DB 21;
Pred. No. 5.4e-35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
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AAW34286
AAW AAW3
XX
XX
XX
AC AAW3
AC 
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Best Local
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Note: This sequence is not shown in the specification, but is derived from the full length human plasminogen sequence (AAB01887) shown in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention relates to a method of preparing plasminogen kringle 5 peptide fragments. The method comprises mixing mammalian plasminogen and elastase in the ratio 1:100-1:300, followed by incubating and isolating the fragment. The kringle 5 peptides are inhibitors of angiogenesis and endothelial cell proliferation and migration. The peptides are useful for treating angiogenic diseases, primary and metastatic solid tumours and carcinomas of various organs such as breast, genital tract, endocrine glands, skin, tumours of the brain and eyes and solid tumours arising from haematopoietic malignancies such as leukaemias and lymphomas. They are also used for the prophylaxis of various autoimmune diseases (e.g., rheumatoid arthritis), ocular diseases, skin diseases (e.g., psoriasis), blood vessel diseases (e.g., haematoidas, Osler-Webber conditions of the prophylaxis of various autoimmune diseases (e.g., psoriasis), blood vessel diseases (e.g., haematoidas, Osler-Webber conditions)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Plasminogen; human; Kringle 5 peptide; anti-angiogenesis agent; cancer; metastatic solid tumour; carcinoma; sarcoma; lymphoma; haemangioma; psoriasis; arthritis; macular degeneration; diabetic retinopathy; autoimmune disease; ocular disease; capillary proliferation; therapy;
                                                                                                                                                                                                                                                               03-APR-1997;
03-MAY-1996;
                                                                                                                                                                                                                                                                                                                                                              05-MAY-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
New kringle 5 peptide(s) and fusion proteins derived from
                                                             WPI; 1997-558670/51
                                                                                                                                                                                                                                                                                                                                                                                                                           13-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO9741824-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          kringle 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human kringle 5
                                                                                                                                                                                              (ABBO ) ABBOTT LAB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                             Gubbins
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                                                                                                                                                                                                                                                           97US-0832087.
96US-0643219.
                                                                                                                                                                                                                                                                                                                                                          97WO-US07700.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        peptide fragment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein; 101 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    84.6%;
                                                                                                                             ը,
                                                                                                                          Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 430; DB 21;
Pred. No. 5.5e-35;
7; Mismatches 8
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joints, wound granulation, ulcers etc., also as contraceptives that inhibit ovulation and establishment of the placents. K5 antisers or (ant) agonists can be used similarly, optionally coupled to cytotoxic agents. Antagonists may be used to induce angiogenesis, e.g. for woun healing. The K5 peptides are also used to raise specific antibodies (for diagnosis and for affinity purification of K5 receptors. The K5 receptors may then be expressed in tumour cells to increase their response to the peptides or used for identification of smaller antagonists. The Ab are used to detect/quantify the peptides in inhibit proliferation of modells with low toxicity against normal cells. Typically they have 800-times greater inhibitory activity against bovine capillary cells in vitro than kringle 1-4 peptides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            plasminogen - useful as anti-angiogenesis agents for treating
cancer, psoriasis, arthritis etc., including gene therapy
                                                                                                                                                                                                                                                                                                                                                                 fragments can also be used to treat autoimmune or ocular diseases, capillary proliferation within atherosclerotic plaque, haemophiliac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     anti-angiogenesis agents, specifically for treating or preventing cancer, particularly primary or metastatic solid tumours, carcinomas, sarcomas,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      plasminogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This sequence
                                                                                                                                                                                                                                                                                                                                                                                                                    lymphomas, haemangiomas. They can also be used for treating or preventing psoriasis, arthritis, macular degeneration and diabetic retinopathy. The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fig 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 e is a kringle 5 (K5)
K5 peptide fragments
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      peptide homologous to human homologous to this sequence,
                                                                                                                     selectively
                                                                                                                                                                                                                                                                     tor wound
                                                                       activity
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                                                                                        Matches
                                                                                                    Best Local
                                                                                                             Query Match
 77
                     61
                                              17
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                                                                   Н
                                                                                                   Similarity
                      INGPWCYTMNPRKLFDYCDIPLCAS 85
                                                          EQDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGD 60
VGGPWCYTINPRKLYDYCDVPQCAA 101
                                              EEDCMFGNGKGYRGKRATTVIGTPCQDWAAQEPHRHSIFTPETNPRAGLEKNYCRNPDGD
                                                                                        Conservative
                                                                                                   84.6%;
                                                                                        7; Mismatches
                                                                                                   Score 430; DB 18;
Pred. No. 5.7e-35;
                                                                                          œ
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                                                                                                               Length 101;
                                                                                          Indels
                                                                                        Gaps
                                              76
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Sequence

101 AA;

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RESULT 13
AAB01890
Human plasminogen kringle 5,
                              18-SEP-2000
                                                            AAB01890;
                                                                                         AAB01890 standard; Protein; 101
                            (first entry)
SEQ ID NO:34.
                                                                                          $
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03-MAY-1996; 03-APR-1997; Plasminogen; kringle 5 domain; endothelial cell proliferation; angiogenesis; antiproliferative; antiarteriosclerotic; cytostatic; antipsoriatic; antiinflammatory; antiulcer; antirheumatic; antiarthritic; Davidson DJ 05-MAY-1997; 02-MAY-2000 US6057122-A. Homo antiangiogenic; (ABBO ) ABBOTT LAB. 96US-0643219 97US-0832087 97US-0851350. cancer; tumour; autoimmune disease

WPI; 2000-349573/30.

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ARBOULT 14
AABO112
ID AABO1
XX AABO1
XX AABO1
XX AABO1
XX Plasm
CW Plasm
KW Plasm
KW Antig
KW Antig
KW Antig
KW Antig
XX ABO0
XX US605
XX US605
XX US605
XX US605
XX O3-MB
PR 03-MB
PR 03-MB
XX O3-MB
PR 03-AE
XX O3-MB
PR 03-AE
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CXX O3-MB
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention relates to a method of preparing plasminogen kringle 5 CC peptide fragments. The method comprises mixing mammalian plasminogen and CC elastase in the ratio 1:100-1:300, followed by incubating and isolating CC the fragment. The kringle 5 peptides are inhibitors of angiogenesis and CC endothelial cell proliferation and migration. The peptides are useful CC for treating angiogenic diseases, primary and metastatic solid tumours CC and carcinomas of various organs such as breast, genital tract, CC endocrine glands, skin, tumours of the brain and eyes and solid tumours CC syndrome such as leukaemias and CC lymphomas. They are also used for the prophylaxis of various autoimmune CC diseases (e.g., rheumatoid arthritis), ocular diseases, skin diseases CC (e.g., psoriasis), blood vessel diseases (e.g. haemangiomas, Osler-Webber CC syndrome), diseases caused by excessive or abnormal stimulation of CC disease and ulcers). The peptides are also useful as a birth control CC disease and ulcers). The peptides are also useful as a birth control CC disease which inhibits ovulation and establishment of the placenta.

CC sequences AAB01890-B01894 represent, respectively, human, murine, Rhesus CC monkey, bovine and porcine plasminogen kringle 5 domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loc
Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Plasminogen; human; kringle domain; endothelial cell proliferation; angiogenesis; antiproliferative; antiarteriosclerotic; cycostatic; antipsoriatic; antiinflammatory; antiulcer; antirheumatic; antiarthiantingiogenic; cancer; tumour; autoimmune disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Preparation of Kringle five peptide fragment for treating various disorders such as angiogenic, ocular, skin diseases and cancer, involves mixing mammalian plasminogen and elastase followed by incubation and isolation -
                                 Davidson DJ
                                                                                                                                                              03-MAY-1996;
03-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
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                                                                                                                                                                                                                                                             05-MAY-1997;
                                                                                                                                                                                                                                                                                                                          02-MAY-2000.
                                                                                                                                                                                                                                                                                                                                                                                             US6057122-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       antiangiogenic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human plasminogen kringle 5 (Val443-Ala543).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAB01912;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-SEP-2000
                                                                                              (ABBO ) ABBOTT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VGGPWCYTTNPRKLYDYCDVPQCAA 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INGPWCYTMNPRKLFDYCDIPLCAS 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EEDCMFGNGKGYRGKRATTVTGTPCQDWAAQEPHRHS1FTPETNPRAGLEKNYCRNPDGD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84.6%;
llarity 82.4%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
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A
                                                                                              LAB.
                                                                                                                                                              96US-0643219.
97US-0832087.
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Pred. No. 5.7e-35;
7; Mismatches 8;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         antiarthritic;
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Preparation of Kringle five peptide fragment for treating vario disorders such as angiogenic, ocular, skin diseases and cancer, involves mixing mammalian plasminogen and elastase followed by incubation and isolation -
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WPI; 2000-349573/30.

Example 17; Page -; 48pp; English.

the fragment. The kringle 5 peptides are inhibitors of angiogenesis and carcinomas cell proliferation and migration. The peptides are useful for treating angiogenic diseases, primary and metastatic solid tumours and carcinomas of various organs such as breast, genital tract, and carcinomas of various organs such as breast, genital tract, arising from haematopoietic malignancies such as leukaemias and carising from haematopoietic malignancies such as leukaemias and ymphomas. They are also used for the prophylaxis of various autoimmune diseases (e.g., rheumatoid arthritis), ocular diseases, skin diseases (e.g., psoriasis), blood vessel diseases (e.g. haemangiomas, Osler-Webber (e.g., psoriasis), blood vessel diseases (e.g. haemangiomas, Osler-Webber syndrome), diseases caused by excessive or abnormal stimulation of endothelial cells (e.g., Crohn's disease, atherosclerosis), diseases which have angiogenesis as a pathologic consequence (e.g., cat scratch disease and ulcers). The peptides are also useful as a birth control agent which inhibits ovulation and establishment of the placenta. Sequences AAB01906-B01919 represent fragments of human plasm in an exemplification of the invention. Note: This sequence is not shown in the specification, but i from the full length human plasminogen sequence (AAB01887) peptide fragments. elastase in the ra invention relates to on relates to a method of preparing plasminogen kringle 5 ments. The method comprises mixing mammalian plasminogen and the ratio 1:100-1:300, followed by incubating and isolating t. The kringle 5 peptides are inhibitors of angiogenesis and Bhown and

Sequence 101 AA;

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                                                                                          Query Match
Best Local S
Matches 70
 77
                      61 INGPWCYTMNPRKLFDYCDIPLCAS 85
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                                                                                                        Similarity
                                                           EQDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTF1PGTNKWAGLEKNYCRNPDGD
                                             EEDCMFGNGKGYRGKRATTVTGTPCQDWAAQEPHRHSIFTPETNPRAGLEKNYCRNPDGD
UGGPWCYTTNPRKLYDYCDVPQCAA 101
                                                                                            Conservative
                                                                                                       84.6%;
                                                                                                        Score 430; DB 21;
Pred. No. 5.7e-35;
                                                                                             Mismatches
                                                                                             8
                                                                                                                  Length 101;
                                                                                             Indels
                                                                                             0
                                                                                             Gaps
                                                 76
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AAB01915 standard; Protein; 104

18-SEP-2000 (first entry)

Human plasminogen kringle 5 (Val443-Phe546).

RESULT 15
AAB01915
ID AAB01
XX Plass
XX Plass
XX Plass
XX Angi
XX Angi
XX Angi
XX Angi
XX OS Homb
XX Plass
XX Plass
YX OS Plass
YX O Plasminogen; human; kringle domain; endothelial cell prolif angiogenesis; antiproliferative; antiarteriosclerotic; cyto antipsoriatic; antiinflammatory; antiulcer; antirheumatic; antiangiogenic; cancer; autoimmune disease. proliferation; antiarthritic;

Homo sapiens

US6057122-A

05-MAY-1997; 97US-0851350.

03-MAY-1996; 96US-0643219. 97US-0832087.

(ABBO ) ABBOTT LAB

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Search completed: January 12, 2004, 17:23:22 Job time: 35.2707 secs
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                                                                                                                                                                                                                                                                                                                                                                                                                                        CC The invention relates to a method of preparing plasminogen kringle 5
CC peptide fragments. The method comprises mixing mammalian plasminogen and
CC elastase in the ratio 1:100-1:300, followed by incubating and isolating
CC the fragment. The kringle 5 peptides are inhibitors of angiogenesis and
CC endothelial cell proliferation and migration. The peptides are useful
CC for treating angiogenic diseases, primary and metastatic solid tumours
CC endocrine glands, skin, tumours of the brain and eyes and solid tumours
CC arising from haematopoietic malignancies such as leukaemias and
CC lymphomas. They are also used for the prophylaxis of various autoimmune
CC diseases (e.g., rheumatoid arthritis), ocular diseases, skin diseases
CC (e.g., psoriasis), blood vessel diseases (e.g. haemangiomas, Osler-Webber
CC Syndrome), diseases caused by excessive or abnormal stimulation of
CC endothelial cells (e.g., Crohn's disease, atherosclerosis), diseases
CC which have angiogenesis as a pathologic consequence (e.g., cat scratch
CC disease and ulcers). The peptides are also useful as a birth control
CC agent which inhibits ovulation and establishment of the placenta.
CC sequences AAB01906-B01919 represent fragments of human plasminogen used
CC in an exemplification of the invention.
CC Note: This sequence is not shown in the specification, but is derived
CC from the full length human plasminogen sequence (AAB01887) shown in
                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 70; Conserv
                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Preparation of Kringle five peptide fragment for treating various disorders such as anglogenic, ocular, skin diseases and cancer, involves mixing mammalian plasminogen and elastase followed by incubation and isolation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 17; Page -; 48pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                          figure 1.
                                                                                                                       77 VGGPWCYTTNPRKLYDYCDVPQCAA 101
                                                                                                                                                                                       17 EEDCMFGNGKGYRGKRATTVTGTPCQDWAAQEPHRHSIFTPETNPRAGLEKNYCRNPDGD
                                                                                                                                                                                                               EQDCMFGNGKGYRGKKATTVTGTFCQEMAAQEPHRHSTFIFGTNKWAGLEKNYCRNPDGD 60
                                                                                                                                                                                                                                                                                                                                                                                104 AA;
                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                               84.6%; Score 430; DB 21; Length 104;
82.4%; Pred. No. 5.9e-35;
tive 7; Mismatches 8; Indels
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                                                                                                                                                                                                                                                                                 Gaps
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Run
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Maximum Match 100%
Listing first 45 summaries
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Maximum DB
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Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OM protein - protein search, using sw model
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/ cgn2_6/ptodata/1/pubpaa/US06_NEW PUB.pep: *
/ cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.pep: *
/ cgn2_6/ptodata/1/pubpaa/US07_NEW PUB.pep: *
/ cgn2_6/ptodata/1/pubpaa/PCTUS_PUBCOMB.pep: *
/ cgn2_6/ptodata/1/pubpaa/US08_NEW PUB.pep: *
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[: /cgn2_6/ptodata/1/pubpaa/US07_b: /cgn2_6/ptodata/1/pubpaa/US06_: /cgn2_6/ptodata/I/pubpaa/US06_: /cgn2_6/ptodata/I/pubpa/US06_: /cgn2_6/pt
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/cgn2_6/ptodata/1/pubpaa/PCTUS_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/USO8_NEW_PUB_pep:*
/cgn2_6/ptodata/1/pubpaa/USO8_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/USO9A_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/USO9A_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/USO9E_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/USO9N_PUBCOMB.pep:*
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/cgn2_6/ptodata/1/pubpaa/USON_PUBCOMB.pep:*
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10 US-09-967-386-1

15 US-10-304-287-1

15 US-10-304-893-2

12 US-10-237-144-1

15 US-10-193-656-2

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17 US-09-788-142-1
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Sequence 6, Appli
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Sequence 126, App
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52.7		53.6		54.0	54.0	54.0	54.0	•	54.0	54.0	54.0	54.0	54.0	54.0	54.4	54.4	54.4	54.4	54.4	76.2	76.2	78.1	78.1	79.7	79.9	79.9	79.9	79.9	79.9
79	81	83	250	250	250	250	160	160	160	160	79	79	79	79	339	339	339	339	339	80	80	459	459	79	812	812	812	812	812
12	12	12	15	12	10	9	15	12	10	9	15	12	10	9	15	12	10	9	9	12	9	12	9	9	15	12	10	9	9
US-09-981-151A-85	US-10-004-378A-188	US-09-981-151A-86	US-10-131-241-31	US-10-402-364-31	US-09-335-325-31	US-09-761-120-31	US-10-131-241-36	US-10-402-364-36	US-09-335-325-36	US-09-761-120-36	US-10-131-241-9	US-10-402-364-9	US-09-335-325-9	US-09-761-120-9	US-10-131-241-4	US-10-402-364-4	US-09-335-325-4	US-09-761-120-4	US-09-788-142-4	US-10-402-364-47	US-09-761-120-47	US-10-402-364-46	US-09-761-120-46	US-09-753-064-1	US-10-131-241-1	US-10-402-364-1	US-09-335-325-1	US-09-873-676-81	US-09-761-120-1
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## ALIGNMENTS

RESULT 1 US-09-748-468-1

Sequence 1, Application US/09748468
Patent No. US20010051347A1
GENERAL INFORMATION:

APPLICANT: Kundu, S.
APPLICANT: Kundu, S.
APPLICANT: Ziemann, R.
TITLE OF INVENTION: SPECIFIC ANTIBODIES TO KRINGLE 5 OF
TITLE OF INVENTION: APO(A) AND METHODS OF USE THEREFOR
FILE REFERENCE: 6296, US. 0.1
CURRENT APPLICATION NUMBER: US/09/748, 468
CURRENT FILING DATE: 2000-12-26
PRIOR APPLICATION NUMBER: 09/234,553
PRIOR APPLICATION NUMBER: 09/234,553
PRIOR FILING DATE: 1999-01-20
NUMBER OF SEQ ID NOS: 1
SOFTWARE: FastSEQ for Windows Version 3.0
SOFTWARE: FastSEQ for Windows Version 3.0

LENGTH: 91

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RESULT 2
US-09-870-759-126
; Sequence 126, Application US/09870759
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Best Local Similarity
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ORGANISM: Homo sapiens
                                                           61 INGPWCYTMNPRKLFDYCDIPLCASS 86
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ilarity 100.0%;
Conservative 0,
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Pred. No. 2e-49;
Mismatches
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; ORGANISM: Homo sapiens
US-09-751-708A-126
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                                                                                                                                                                                 RESULT 4
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Sequence 1, Application US/09967386
Patent NO. US20020159992A1
GENERAL INFORMATION:
APPLICANT: Abbott Laboratories
APPLICANT: Henkin, Jack
APPLICANT: Davidson, Donald J.
TITLE OF INVENTION: ANTIANGIOGENIC POLYPEPTIDES AND METHODS
TITLE OF INVENTION: FOR INHIBITING ANGIOGENESIS
                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 100.
86; Conservative
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APPLICANT: TERMAN, David S
TITLE OF INVENTION: COMPOS:
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APPLICANT: TERMAN, David S
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SEQ ID NO 126
LENGTH: 1169
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SEQ ID NO 126
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CURRENT APPLICATION NUMBER: US/09/870,759
CURRENT FILING DATE: 2002-01-14
PRIOR APPLICATION NUMBER: US 60/208,128
PRIOR FILING DATE: 2000-05-30
NUMBER OF SEQ ID NOS: 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/09/751,708A CURRENT FILING DATE: 2002-10-15 PRIOR APPLICATION NUMBER: US 60/173,371 PRIOR FILING DATE: 1999-12-28 NUMBER OF SEQ ID NOS: 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: COMPOSITIONS AND METHODS FILE REFERENCE: 751708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
ORGANISM: Homo sapiens
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100.0%; Pred. No. 3.1e-48;
tive 0; Mismatches 0;
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PRIOR APPLICATION NUMBER: US 60/236,550
PRIOR FILING DATE: 2000-09-29
NUMBER OF SEQ ID NOS: 7
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 1
LENGTH: 791
TYPE: PRT
ORGANISM: Homo sapiens
US-09-967-386-1
US-09-946-893-2

; Sequence 2, Application US/09946893
; Patent NO. US20020072494A1
; GENERAL INFORMATION:
APPLICANT: Cao, Yihai
; TITLE OF INVENTION: Materials and methods rel
; TITLE OF INVENTION: inhibitors
; FILE REFERENCE: Mewburn
; CURRENT APPLICATION NUMBER: US/09/946,893
; CURRENT FILING DATE: 2001-09-05
; PRIOR APPLICATION NUMBER: US 60/230,893
; PRIOR FILING DATE: 2000-09-05
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Publication No. US20030083234A1
GENERAL INFORMATION:
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Best Local
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Waisman, David M.
APPLICANT: Kwon, Mijung
ITILE OF INVENTION: Anti-angiogenesis methods, compositions and uses therefor
FILE REFERENCE: MED2-001
CURRENT APPLICATION NUMBER: US/10/304,287
CURRENT FILING DATE: 2002-11-26
PRIOR APPLICATION NUMBER: US 60/333,866
PRIOR APPLICATION NUMBER: US 60/333,866
PRIOR FILING DATE: 2001-11-28
NUMBER OF SEQ ID NOS: 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILE REFERENCE: 6738.US.02
CURRENT APPLICATION NUMBER: US/09/967,386
CURRENT FILING DATE: 2001-09-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 791
TYPE: PRT
ORGANISM: mammalian
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                                                                                                                                                                                                                                                                                                                     61 INGPWCYTMNPRKLFDYCDIPLCAS
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Pred. No. 1.1e-39;
7; Mismatches 8
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Pred. No. 1.1e-39;
7; Mismatches 8
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                                                                                                                         relating to endothelial cell growth
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APPLICANT: LI, Jinan
APPLICANT: LI, Jinan
APPLICANT: HELLSTROM, Sten
APPLICANT: HELLSTROM, Sten
APPLICANT: ERIKSSON, Per-Olof
TITLE OF INVENTION: METHOD OF WOUND HEALING
FILE REFERENCE: 3810/1J759-US1
CURRENT APPLICATION NUMBER: US/10/237,144
CURRENT FILING DATE: 2002-09-05
PRIOR APPLICATION NUMBER: US 60/317,643
PRIOR FILING DATE: 2001-09-06
NUMBER OF SEQ ID NOS: 5
SOFTWARE: Patentin version 3.1
SEQ ID NO 1
Publication NO. CREATION:
GENERAL INFORMATION:
APPLICANT: NY Tor
APPLICANT: HOLMDAHL, Rikard
APPLICANT: LI, Jinan
TITLE OF INVENTION: NOVEL DRUG TARGETS FOR ARTHRITIS
FILE REFERENCE: 3810/1J577-US3
CURRENT APPLICATION NUMBER: US/10/193,656
CURRENT APPLICATION NUMBER: US/10/193,656
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US-10-193-656-2
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Best Local !
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SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 2
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TYPE: PRT
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DATABASE ENTRY DATE: 2000-09-15
RELEVANT RESIDUES: (1)..(810)
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TYPE: PRT
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Local Similarity 82.4%;
ses 70; Conservative 7
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Pred. No. 1.2e-39;
7; Mismatches 8
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APPLICANT: Cao, Yihai
TITLE OF INVENTION: Materials and methods relating to
TITLE OF INVENTION: inhibitors
FILE REFERENCE: Mewburn
CURRENT APPLICATION NUMBER: US/09/946,893
CURRENT FILING DATE: 2001-09-05
PRIOR APPLICATION NUMBER: US 60/230,893
PRIOR APPLICATION NUMBER: US 60/230,893
PRIOR FILING DATE: 2000-09-05
NUMBER OF SEQ ID NOS: 11
SOFTWARE: Patentin Ver. 2.1
SOFTWARE: Patentin Ver. 2.1
SOFTWARE: Patentin Ver. 2.1
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Patent No. US20020072494A1
                                                                                                                                                       Matches
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PRIOR TILING DATE: 2001-07-10
PRIOR APPLICATION NUMBER: US 60/304,490
PRIOR FILING DATE: 2001-07-10
PRIOR APPLICATION NUMBER: US 60/305,182
PRIOR PILING DATE: 2001-07-13
NUMBER OF SEQ ID NOS: 18
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TYPE: PRT
ORGANISM: Homo sapiens
PUBLICATION INFORMATION:
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                                                                                                                                                                                                                                                                     TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
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DATABASE ENTRY DATE: 1986-07-21
RELEVANT RESIDUES: (1)..(810)
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                                                                                                                                                                       Local Similarity 80.2%;
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538 VGGPWCYTTNPRKLYDYCDVPQCAA 562
538 VGGPWCYTTNPRKLYDYCDVPQCCAA
                                                                            61 INGPWCYTMNPRKLFDYCDIPLCASS 86
                                                                                                       1 EQDCMFGNGKKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGD 60
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Similarity 82.4%;
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Pred. No. 1.7e-39;
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Pred. No. 1.2e-39;
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US-09-946-893-8
; Sequence 8, Application US/09946893
; Patent No. US20020072494A1
; GENERAL INFORMATION:
; APPLICANT: Cao, Yihai

RESULT 10

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RESULT 12
US-09-946-893-4
; Sequence 4, Application US/09946893
; Patent No. US20020072494A1
; GENERAL INFORMATION:
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US-09-946-893-6
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APPLICANT: Cao, Yihai
TITLE OF INVENTION: Materials and methods relating to endothelial cell growth
TITLE OF INVENTION: inhibitors
FILE REFERENCE: Mewburn
CURRENT APPLICATION NUMBER: US/09/946,893
CURRENT FILING DATE: 2001-09-05
PRIOR APPLICATION NUMBER: US 60/230,893
PRIOR FILING DATE: 2000-09-05
NUMBER OF SEQ ID NOS: 11
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Patent No. US20020072494A1
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SEQ ID NO 6
LENGTH: 576
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Best Local Similarity
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LENGTH: 571
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ORGANISM: Artificial Sequence
FEATURE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: PRT
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Similarity 80.2%;
69; Conservative
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                                                                                                                                                                                                                                   EEDCMFGNGKGYRGKRATTVTGTPCQDWAAQEPHRHSIFTPETNPRAGLEKNYCRNPDGD
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Pred. No. 1.7e-39; 
8; Mismatches 9; Indels
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Pred. No. 1.7e-39;
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RESULT 13
US-09-753-064-6
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 6, Application US/09753064
Patent No. US20010016644A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 4
LENGTH: 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Cao, Yihai
TITLE OF INVENTION: Materials and methods relating to endothelial cell growth
TITLE OF INVENTION: inhibitors
FILE REFERENCE: Mewburn
CURRENT APPLICATION NUMBER: US/09/946,893
CURRENT FILING DATE: 2001-09-05
PRIOR APPLICATION NUMBER: US 60/230,893
PRIOR APPLICATION NUMBER: US 60/230,893
PRIOR FILING DATE: 2000-09-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS: 11
                                                                                                                           TELEFAX: 404-818-3799 INFORMATION FOR SEQ ID NO: 6:
                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 80 amino acids
TYPE: amino acid
                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
NAME: Warren, William L.
REGISTRATION NUMBER: 36,714
                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/763,528
FILING DATE: 12-DEC-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Cao, Yihai
Folkman, M. Judah
TITLE OF INVENTION: Endothelial Cell Proliferation Inhibitor
MOLECULE TYPE: P
HYPOTHETICAL: NO
                                                                                                                                                                             REFERENCE/DOCKET NUMBER: 05940-0251
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          436 VGGPWCYTTNPRKLYDYCDVPQC 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 INGPWCYTMNPRKLFDYCDIPLC 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 EQDCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGD 60
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                                TOPOLOGY: linear
                                                  STRANDEDNESS: single
                                                                                                                                                               TELEPHONE: 404-818-3700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 30303
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: Atlanta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 191 Peachtree Street,
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                 protein
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83.1%;
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Pred. No. 2.3e-39;
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RESULT 15
US-09-788-142-1
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US-10-267-137-8
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APPLICANT: Xin, Li
APPLICANT: Li, Zai-
APPLICANT: Gan, Ren
                                                           Sequence 1, Application US/09788142
Patent No. US20010029246A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 67; Conserv
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TITLE OF INVENTION: KRINGLE DOMAIN 1 OF HUMAN HEPATOCYTE
TITLE OF INVENTION: GROWTH FACTOR AND USES THEREFOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILE REFERENCE: 524282000100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                     OTHER INFORMATION: Sequence alignment of kringle domains OTHER INFORMATION: plasminogen and HGF
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nes 67; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCATION: 1..80
OTHER INFORMATION: /note= "Kringle 5 - Figure 3"
SEQUENCE DESCRIPTION: SEQ ID NO: 6:
O'Reilly, Michael TITLE OF INVENTION: Angiostatin Fragments and Method of Use NUMBER OF SEQUENCES: 6
                                            APPLICANT: Folkman, M. Judah
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ANTI-SENSE: NO FRAGMENT TYPE:
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                                                                                                                                                                                                  PWCYTMNPRKLFDYCDIPLC 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Li, Zai-Ping
Gan, Ren-bao
Zhou, Qing-wei
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                                                                                                                                                                   PWCYTTNPRKLYDYCDVPQC 80
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ilarity 83.8%;
Conservative !
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                                                                                                                                                                                                                                                                                          81.1%; Score 412; DB 12;
83.8%; Pred. No. 9.8e-39;
tive 5; Mismatches 8;
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Pred. No. 9.8e-39;
5; Mismatches 8
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Search completed: January 12, 2004, 17:29:39 Job time : 25.218 secs
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Best Local S
Matches 68
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SEQUENCE CHARACTERISTICS:
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATION OPERATION DATA:

PRIOR APPLICATION NUMBER: US/09/788,142
PRIOR APPLICATION CONMONNEY
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Warren, William L.
REGISTRATION NUMBER: 36,714
REFERENCE/DOCKET NUMBER: 05940-0129
TELECOMMUNICATION INFORMATION:
TELEPHONE: (404) 818-3700
TELEFAX: (404) 818-3799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US 08/866,735
FILING DATE: <Unknown>
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: linear MOLECULE TYPE: protein HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                          CLONE: Plasminogen
SEQUENCE DESCRIPTION: SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Murine IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FRAGMENT TYPE: N-terminal ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ANTI-SENSE: NO
                                                                                             538 VNGPWCYTTNPRKLYDYCDIPLCASA 563
                                                                                                                                                                                    478 ETDCMYGNGKDYRGKTAVTAAGTPCOGWAAQEPHRHSIFTPQTNPRADLEKNYCRNPDGD 537
                                                                                                                       61 INGPWCYTMNPRKLFDYCDIPLCASS 86
                                                                                                                                                                                                                1 EQDCMFGNGKGYRGKKATTVTGTPCQEWAAQBPHRHSTFIFGTNKWAGLEKNYCRNPDGD 60
                                                                                                                                                                                                                                                                              68;
                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 812 amino acids TYPE: amino acid
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STATE: Georgia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE: Jones & Askew, LLP STREET: 191 Peachtree Street, 37th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRANDEDNESS: <Unknown>
                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                79.9%;
                                                                                                                                                                                                                                                                         Score 406; DB 9; Length 812;
Pred. No. 5.7e-37;
4; Mismatches 14; Indels
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Minimum DB
Maximum DB
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No.
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Maximum Match 100%
Listing first 45 summaries
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score
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   length: 0
length: 2000000000
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Match
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1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*

2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep:*

3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep:*

4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep:*

5: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*

6: /cgn2_6/ptodata/1/iaa/backfiles1.pep:*
     BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-088-548-8
508
1 EQDCMFGNGKGYR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
     GenCore version 5.1.6 (c) 1993 - 2004 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB
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US-09-234-553-1
US-08-91-761A-11
US-09-131-95-4
US-09-131-95-7
US-09-131-95-7
US-09-131-95-7
US-09-131-95-3
US-09-132-154-6
US-09-132-154-6
US-09-132-154-6
US-09-131-95-2
US-09-131-95-2
US-08-832-0878-6
US-09-131-95-2
US-08-831-95-2
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US-09-132-154-5
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US-08-132-0878-1
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   1, Appli
4, Appli
4, Appli
4, Appli
7, 
   CORRESPONDENCE ADDRESS:
ADDRESSEE: Sheridan Ross P.C.
STREET: 1700 Lincoln St., Suite 3500
CITY: Denver
STATE: CO
COUNTRY: USA
                                                                                                          APPLICANT: Gately, Stephen
APPLICANT: Twardowski, Przemyslaw
TITLE OF INVENTION: "Methods and C
TITLE OF INVENTION: Angiostatin"
NUMBER OF SEQUENCES: 16
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RESULT 2 US-08-991-761A-11 ; Sequence 11, Application US/08991761A ; Patent No. 6576609 ; PATENT INFORMATION:     APPLICANT: Soff, Gerald ; APPLICANT: Gately, Stephen	Qy 61 INGPWCYTMNPRKLFDYCDIPLCASS 86	Qy 1 EQDCMEGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTE1PGTNKWAGLEKNYCRNPDG	Query Match 100.0%; Score 508; DB 3; Length 91; Best Local Similarity 100.0%; Pred. No. 1.3e-50; Matches 86; Conservative 0; Mismatches 0; Indels 0; Gar	LENGTH: TYPE: PR ORGANISM S-09-234-55	; NUMBER OF SEQ ID NOS: 1 ; SOPTWARE: FastSEQ for Windows Version 3.0 ; SEQ ID NO 1	ENT APPLICATION	APPLICA APPLICA TITLE C	RESULT 1 US-09-234-553-1 ; Sequence 1, Application US/09234553 ; Patent No. 6210906 . GENERAL TUROPMATTON.	ALIGNMENTS	5 83.7 791 3 US-08-851-350-1 9 82.5 100 1 US-08-643-219-9 9 82.5 100 2 US-09-131-995-9	425 83.7 104 1 US-08-643-219-5 Sequence 425 83.7 333 4 US-08-991-761A-8 Sequence 425 83.7 791 1 US-08-643-219-1 Sequence	425 83.7 98 1 US-08-643-219-6 Sequence 425 83.7 101 1 US-08-643-219-2 Sequence	425 83.7 90 1 US-08-643-219-4 Sequence 425 83.7 93 1 US-08-643-219-7 Sequence 425 83.7 95 1 US-08-643-219-3 Sequence	430 84.6 814 1 US-08-750-711-1 Sequence 1, 428 84.3 101 3 US-08-851-350-36 Sequence 36	430 84.6 810 3 US-09-086-514-1 Sequence 1, 430 84.6 810 4 US-09-192-012-5 Sequence 5, 430 84.6 810 6 5200340-8 Patent No. 5	430 84.6 810 1 US-07-854-603-2 Sequence 2, 430 84.6 810 1 US-08-147-000B-29 Sequence 29	
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 4, Application US/09131995
Patent No. 5972896
GENERAL INFORMATION:
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                                                 CLASSIFICATION:
PRIOR APPLICATION DATA:
PRIOR APPLICATION UNMBER: US/08/832,087
EILING DATE: 03-APR-1997
APPLICATION NUMBER: 08/643,219
EILING DATE: 06-MAY-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE: (303) 863-970
TELEFAX: (303) 863-0223
INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: Crook, Wannell M.
REGISTRATION NUMBER: 31,071
REFERENCE/DOCKET NUMBER: 3501
TELECOMMUNICATION INFORMATION:
TELEPHONE: (303) 863-9700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/991,761A
                                                                                                                                                                                                                       SOFTWARE: FastSEQ Version 2.0 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
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                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES: 14
CORRESPONDENCE ADDRESS:
ADDRESSEE: Abbott Laboratories
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: NOVEL ANTIANGIOGENIC PEPTIDES TITLE OF INVENTION: AND METHODS FOR INHIBITING AN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Dolc-
                                                                                                                                                                                                                                                         COMPUTER: IBM CONTROL OPERATING SYSTEM:
NAME: Casuto, Dianne
REGISTRATION NUMBER: 40,943
REFERENCE/DOCKET NUMBER: 5940.US.P1
                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                   APPLICATION NUMBER: US/09/131,995
                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                         STREET:
                                                                                                                                                                                                                                                                                                                                                                       CITY: Abbott Park
STATE: IL
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83.7%;
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Best Local Similarity
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MEDIUM TYPE: Diakette
COMPUTER: IEM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: PastSEQ Version 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                      APPLICATION NUMBER: 08/643,21
FILING DATE: 06-MAY-1996
ATTORNEY/AGENT INFORMATION:
NAME: Casuto, Dianne
REGISTRATION NUMBER: 40,943
REFERENCE/DOCKET NUMBER: 5940
TELECOMMUNICATION INFORMATION:
TELEPHONE: 847-938-3137
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                                                                                                                    INFORMATION FOR SEQ ID NO:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
LENGTH: 90 amino acids
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                                                                                SEQUENCE CHARACTERISTICS:
LENGTH: 90 amino acids
                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: UFILING DATE: 03-APR-1
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: NO
TITLE OF INVENTION: AN
NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
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DESCRIPTION: FRAGMENT TYPE:
                                   MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: Abbott Park
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                                                    TOPOLOGY:
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                                                                                  90 amino acids
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internal
                 protein

    Donald J.
NOVEL ANTIANGIOGENIC PEPTIDES
AND METHODS FOR INHIBITING ANGIOGENESIS

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Pred. No. 9.6e-42;
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                                                                                                 Matches
                                                                                                                               Query Match
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                                                                                                                                                                                                                                                                                                                            REGISTRATION NUMBER: 40,943
REGISTRATION NUMBER: 5940
REFERENCE/DOCKET NUMBER: 5940
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION 847-938-3137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
APPLICANT: Davids
                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO:
                                                                                                                                                                            MOLECULE TYPE:
DESCRIPTION:
FRAGMENT TYPE:
                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 90 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/01
FILING DATE: 03-APR-1997
APPLICATION NUMBER: 08/6-
FILING DATE: 06-MAY-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Davidson, Donald J.
TITLE OF INVENTION: NOVEL ANTIANGIOGENIC PEPTIDES
TITLE OF INVENTION: AND METHODS FOR INHIBITING ANGIOGENESIS
                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM Compatible OPERATING SYSTEM: DOS SOFTWARE: FastSEQ Version 2.0
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                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/09/132,154 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZIP: 60064
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                                                                                               70;
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                                                                                                                Similarity
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                                                       EQDCMFGNGKGYRGKKATTVTGTFCQEWAAQEPHRHSTFIFGTNKWAGLEKNYCRNFDGD 60
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                                   EEDCMFGNGKGYRGKRATTVTGTPCQDWAAQEPHRHS1FTPETNPRAGLEKNYCRNPDGD
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100 Abbott Park Road
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                                                                                                            84.6%;
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                                                                                             Score 430; DB 3;
Pred. No. 9.6e-42;
7; Mismatches 8
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Pred. No. 9.6e-42;
7; Mismatches 8
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; DESCRIPTION:
; FRAGMENT TYPE:
US-09-131-995-7
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US-08-832-087B-7
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US-09-131-995-7
                                                                                         Sequence 7, Application US/08832087B Patent No. 5981484 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 7, Application US/09131995
Patent No. 5972896
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO:
                                            APPLICANT: Davidson, TITLE OF INVENTION: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME: Casuto, Dianne
REGISTATION NUMBER: 40,943
REFERENCE/DOCKET NUMBER: 59
TELECOMMUNICATION INFORMATION:
TELEPHONE: 847-338-3137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/08/832,
FILLING DATE: 03-APR-1997
APPLICATION NUMBER: 08/643,219
FILLING DATE: 06-MAY-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: FastSEQ Version 2.0 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: Abbott Laboratories
STREET: 100 Abbott Park Road
             NUMBER OF SEQUENCES: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM: MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION:
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CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 847-938-2623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH:
                                                                                                                                                                                                              66 VGGPWCYTTNPRKLYDYCDVPQCAA
                                                                                                                                                                                                                                61 INGPWCYTMNPRXLFDYCDIPLCAS 85 : |||||| |||:||:||:
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SYSTEM: DOS
Abbott Laboratories
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internal
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                      , Donald J.
NOVEL ANTIANGIOGENIC PEPTIDES
NON METHODS FOR INHIBITING ANGIOGENESIS
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                                                                                                                                                                                                                                                                                                                                            Score 430; DB 2;
Pred. No. 9.9e-42;
7; Mismatches 8
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STREET: CITY: A

. 100 Abbott Park Road Abbott Park

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US-09-132-154-7
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                                                                                                                                                                                                                                                                                                                                                      Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
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Best Local
                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: Davidson, Donald J.
TITLE OF INVENTION: NOVEL ANTIAN
TITLE OF INVENTION: AND METHODS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION: 514
PRIOR APPLICATION UNDER: 08/643,219
FILING DATE: 06-MAY-1996
ATTORNEY/AGENT INFORMATION:
NAME: Casuto, Dianne
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: USA
ZIP: 60064
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                             COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: Fast-SEQ Version 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                             NUMBER OF SEQUENCES: 14
CORRESPONDENCE ADDRESS:
ADDRESSEB: Abbott Laboratories
STREET: 100 Abbott Park Road
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REFERENCE/DOCKET NUMBER: 59
TELECOMMUNICATION INFORMATION:
TELEPHONE: 847-938-3137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: FastSEQ Version 2.0 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/832, FILING DATE: 03-APR-1997
                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                   STREET: 100 ... CITY: Abbott Park
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                                                                                                                                                   ZIP:
CLASSIFICATION:
               APPLICATION NUMBER: US/09/132,154 FILING DATE:
                                                                                                                                                               COUNTRY:
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5. 6251867
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amino acid
OGY: linear
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; DESCRIPTION:
; FRAGMENT TYPE:
US-09-132-154-7
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Patent No. 597289
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Best Local Similarity
                                                            CLASSIFICATION:
PRIOR APPLICATION DATA:
PRIOR APPLICATION NUMBER: US/08/832,08
APPLICATION NUMBER: 03-APR-1997
APPLICATION NUMBER: 08/643,219
FILING DATE: 06-MAY-1996
ATTORNEY/AGENT INFORMATION:
NAME: Casuto, Dianne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
APPLICANT: Davids
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NAME: Casuto, Dianne
REGISTRATION NUMBER: 40,943
REFERENCE/DOCKET NUMBER: 5940
TELECOMMUNICATION INFORMATION:
TELEPHONE: 847-938-3137
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APPLICATION NUMBER: US/0
FILING DATE: 03-APR-1997
NAME: Casuto, Dianne
REGISTRATION NUMBER: 40,943
REFERENCE/DOCKET NUMBER: 5940.US.P1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 847-938-3137
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                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM: MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION:
                                                                                                                                                                                                                                          COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FASTSEQ Version 2.0
                                                                                                                                                                                             APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                         STREET: 100 Abbott
CITY: Abbott Park
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)GY: linear
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                                                                                                                                               US/08/832,087
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Pred. No. 9.9e-42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
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RESULT 10
US-08-832-087B-3
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Query Match
Best Local Similarity 82.3
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Best Local Similarity 82.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 3, Application US/08832087B Patent No. 5981484
                                                                                                                                                                    INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 95 amino acids
                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/08/
FILING DATE: 03-APR-1997
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/64:
APPLING DATE: 06-MAY-1996
FILING DATE: 06-MAY-1996
ATTORNEY/AGENT INFORMATION:
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 95 amino acids
                                                                                               MOLECULE TYPE:
DESCRIPTION:
FRAGMENT TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE:
DESCRIPTION:
FRAGMENT TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FASTEGO VERSION 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                               NAME: Casuto, Dianne
REGISTRATION NUMBER: 40,943
REFERENCE/DOCKET NUMBER: 59
TELECOMMUNICATION INFORMATION:
TELEPHONE: 847-938-3137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES: 1
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                                                                                                                              TOPOLOGY: 1:-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: Abbott Laboratories STREET: 100 Abbott Park Road CITY: Abbott Park
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NOVEL ANTIANGIOGENIC PEPTIDES
AND METHODS FOR INHIBITING ANGIOGENESIS
                                   84.6%;
                                                                                                                                                                                                                                                                                                                                                       08/643,219
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                     Score 430; DB 2,
Pred. No. le-41;
7; Mismatches
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Pred. No. 1e-41;
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                                                  DB 2; Length 95;
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                       Indels
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                       Gaps
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RESULT 12
US-09-131-995-6
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US-09-132-154-3
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GENERAL INFORMATION:
APPLICANT: Davidson,
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                                                                                                                                                                                                               Best Local
                                                                                                                                                                                                                            Query Match
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                                                                                                                                                                                                                                                                                           MOLECULE TYPE:
DESCRIPTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 03-ARR-1997
APPLICATION NUMBER: 08/643,219
FILING DATE: 06-MAY-1996
ATTORNEY/AGENT INFORMATION:
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APPLICATION NUMBER: US/O
FILING DATE: 03-APR-1997
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APPLICATION NUMBER: US/09/132
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MEDIUM TYPE: Diskett
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ADDRESSEE: Abbott Laboratories
STREET: 100 Abbott Park Road
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TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                               FRAGMENT TYPE:
                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REGISTRATION NUMBER: 40, REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                                                                                           TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: 847-938-2623
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                                                                  71
                                                                                      61 INGPWCYTMNPRKLFDYCDIPLCAS 85
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                                                                                                                                                                                                               Similarity
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Casuto, Dianne
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                                                                VGGPWCYTINPRKLYDYCDVPQCAA 95
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NOVEL ANTIANGIOGENIC PEPTIDES
AND METHODS FOR INHIBITING AN
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Pred. No. 1e-41;
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; FRAGMENT TYPE:
US-09-131-995-6
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Patent No. 5972896
GENERAL INFORMATION:
                                                                             Sequence 6, Application US/08832087B
Patent No. 5981484
GENERAL INFORMATION:
APPLICANT: Davidson, Donald J.
TITLE OF INVENTION: AND METHODS F
                                                                                                                                                                                                                                                                                                                                                                                Matches
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SEQUENCE CHARACTERISTICS:
LENGTH: 98 amino acids
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PRIOR APPLICATION NUMBER:
APPLICATION NUMBER:
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MEDIUM TYPE: Diskette
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CORRESPONDENCE ADDRESS:
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TELECOMMUNICATION INFORMATION:
TELEPHONE: 847-938-3137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 03-APR-1997
APPLICATION NUMBER: 08/643,219
FILING DATE: 06-MAY-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: FASTSEQ Version 2.0 CURRENT APPLICATION DATA:
                                              CORRESPONDENCE ADDRESS:
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                                                                 NUMBER OF SEQUENCES:
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OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                             Local
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             STREET:
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                              ADDRESSEE:
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Abbott Park
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100 Abbott Park Road
               E: Abbott Laboratories
100 Abbott Park Road
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internal
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NOVEL ANTIANGIOGENIC PEPTIDES
AND METHODS FOR INHIBITING ANGIOGENESIS
                                                                                NOVEL ANTIANGIOGENIC PEPTIDES AND METHODS FOR INHIBITING ANGIOGENESIS
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Pred. No. 1.1e-41;
                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
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                                                                                                                                                                                                                                                                                                                                                             Sequence 6, Application Patent No. 6251867
GENERAL INFORMATION:
APPLICANT: Davids
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Best Local &
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SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: Casuto, Dianne
REGISTRATION NUMBER: 40,943
REFERENCE/DOCKET NUMBER: 5940
TELECOMMUNICATION INFORMATION:
TELEPHONE: 847-938-3137
TELEFAX: 847-938-2623
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APPLICATION NUMBER: 08/6.
FILING DATE: 06-MAY-1996
ATTORNEY/AGENT INFORMATION:
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MEDIUM TYPE: Diskett
COMPUTER: IBM Compat
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DESCRIPTION:
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PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/0
FILING DATE: 03-APR-1997
                                                                                               COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastCSEQ Version 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION:
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TYPE: a
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                                                                                                                                                                                                                                                              STREET:
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                                                 CLASSIFICATION:
                                                                  FILING DATE
                                                                                 APPLICATION NUMBER:
                                                                                                                                                                                                                                                CITY: Abbott Park
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SYSTEM: DOS
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NOVEL ANTIANGIOGENIC PEPTIDES
AND METHODS FOR INHIBITING ANGIOGENESIS
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                  US/08/832,087
                                                                                   US/09/132,154
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Pred. No. 1.1e-41;
7; Mismatches 8
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APPLICATION NUMBER: 08/643,219
FILING DATE: 06-MAY-1996
ATTORNEY/AGENT INFORMATION:

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RESULT 15
US-09-131-995-2
; Sequence 2, Ap
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Best Local Similarity
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Patent No. 5972896
                                             OPERATION SYSTEM: DOS
SOFTWARE: FRANCESQ Version 2.0
CURRENT APPLICATION DATA:
APPLICATION UNMBER: US/09/131,995
FILING DATE:
CLASSIFICATION DATA:
APPLICATION UNMBER: US/08/832,087
FILING DATE: 03-APR-1997
APPLICATION NUMBER: 08/643,219
FILING DATE: 06-MAY-1996
ATTORNEY/AGENT INFORMATION:
NAME: CASULO, Dianne
REGISTRATION NUMBER: 40,943
REFERENCE/DOCKET NUMBER: 5940.US.P1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 847-938-3137
TELEPAX: 847-938-2623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO:
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
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DESCRIPTION:
FRAGMENT TYPE:
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REFERENCE/DOCKET NUMBER: 594
TELECOMMUNICATION INFORMATION: 847-938-3137
                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatik
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
ADDRESSEE: Abbott La
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Davidson, Donald J.
TITLE OF INVENTION: NOVEL ANTIANGIOGENIC PEPTIDES
TITLE OF INVENTION: AND METHODS FOR INHIBITING ANGIOGENESIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CITY: Abbott Park
STATE: IL
                                                                                                                                                                                                                                                                                                                                                                                                                                      ZIP: 60064
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 847-938-2623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Casuto, Dianne REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11 EEDCMFGNGKGYRGKRATTVTGTPCQDWAAQEPHRHSIFTPETNPRAGLEKNYCRNPDGD 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              amino acid
GY: linear
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100 Abbott Park Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
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ilarity 82.4%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                 IBM Compatible
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                                                                                                        5940.US.P1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
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; LENGTH; 101 amino acids
; TYPE: amino acid
; TYPE: amino acid
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE:
; DESCRIPTION: protein
; PRAGMENT TYPE: internal
US-09-131-995-2

Query Match
Best Local Similarity 82.4%; Pred. No. 1.1e-41;
Matches 70; Conservative 7; Mismatches 8; Indels 0; Gaps

Qy 1 EODCMFGNGKGYRGKKATTVTGTPCQEWAAQEPHRHSTFIPGTNKWAGLEKNYCRNPDGD 60

Qy 1 EODCMFGNGKGYRGKKATTVTGTPCQDWAAQEPHRHSIFTPETNPRAGLEKNYCRNPDGD 60

17 EEDCMFGNGKGYRGKRATTVTGTPCQDWAAQEPHRHSIFTPETNPRAGLEKNYCRNPDGD 76

Qy 61 INGPWCYTNNPRKLFDYCDIPLCAS 85
; ||||||||||||||||
Db 77 VGGPWCYTTNPRKLFDYCDIPLCAS 85
; |||||||||||||||||
Search completed: January 12, 2004, 17:27:16
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Search completed: January 12, 2004, 17:27:16 Job time : 13.2857 secs

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